Democratic People's Republic of Korea

SOCIO-ECONOMIC, DEMOGRAPHIC AND HEALTH SURVEY 2014

Central Bureau of Statistics
Pyongyang, DPRK

United Nations Population Fund

Democratic People's Republic of Korea

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December, Juche 104 (2015)

FOREWORD

Since the Population Census 2008, DPRK has made considerable progress in socio-economic spheres due to the positive efforts of the government and its people. In order to measure these changes and also to facilitate evidence-based planning, the need for conducting a national-level survey was realised.

SDHS-2014 is a household sample survey providing social, economic, demographic, and health particulars of the households and individuals at the national and provincial level. It has been conducted by the Central Bureau of Statistics (CBS), the national agency responsible for undertaking Censuses and Surveys, in collaboration with the Population Centre (PC) and the Population Institute (PI) of **Kim Il Sung** University. UNFPA provided technical assistance right from conception to the finalisation of the report. The questionnaire composed of three types of information covering specific particulars from household, eligible women and elderly.

The fieldwork was implemented in October 2014 and the data processing was nearly completed by March 2015. All the survey supervisors and interviewers from CBS and PC have fulfilled their tasks in their assigned enumeration areas. In order to ensure that high quality data were collected, CBS prepared and undertook field data quality control plan. Apart from CBS monitoring during the fieldwork, UNFPA conducted independent monitoring through a quality assurance guideline.

The results of the survey provide the overall status of the population, housing, education, economic activities, fertility, mortality and reproductive and child health situation in DPRK. It also for the first time provides information about elderly particularly related to their self-perceived health status.

The CBS expresses gratitude to the National Coordinating Committee and Mr. Arie Hoekman, UNFPA Country Director, DPRK for their unstinted support throughout the study. We would like to thank them and particularly UNFPA; for providing financial and technical support to this survey. Further, we would like to extend our deep appreciation to Mr. Sathyanarayana K. M., International

PREFACE

In 2008 the Democratic People's Republic of Korea (DPRK) conducted the most recent population and housing census with support of the United Nations Population Fund (UNFPA). This census provided a wealth of information on population dynamics and socio-economic conditions of the population. The next census is planned to take place in 2018. In order to get a better understanding of socio-economic and demographic dynamics in this inter-censal period, the need for conducting the Socio-Economic, Demographic and Health Survey (SDHS) was perceived important by the Government of DPRK.

The Fifth Cycle of Cooperation between the Government of DPRK, which covers the period 2011-16, has a specific output related to generating evidence-based data for policy advocacy and programmes. The SDHS was implemented under this output and was meant to combine the reproductive health survey that UNFPA has been periodically supporting once in every four years with the inter-censal survey. Furthermore, with the Millennium Development Goals (MDGs) ending in 2015, DPRK has to prepare the MDG Progress Report and also address the transition from the MDGs to the Sustainable Development Goals (SDGs).

The SDHS is a joint and collaborative initiative of the CBS and UNFPA. This survey actually implied a household listing of the entire nation in 2013, which was computerized and validated for consistency in early 2014. It also included an update of the country's cartography. Using this updated household listing frame, in 2014, a sample of 13,250 households across the urban and rural areas of the country was drawn to undertake the combined socio-demographic and the reproductive health survey. The survey includes various social, economic, demographic and reproductive health aspects of the population. For the first time in DPRK, a module on the health and well-being of elderly has been included focusing more on self-perceived health.

This project was coordinated by the CBS and involved close collaboration with the PC and the PI of **Kim Il Sung** University. Technical guidance throughout the project was provided by staff of the UNFPA DPRK and international consultants hired by UNFPA. In addition, UNFPA staff members independently monitored the quality of data collection and ensured quality throughout the study.

The two-year effort of UNFPA along with CBS has culminated in a National Report on the Socio-Economic and Demographic Health Status of the Population of DPRK. I am optimistic that the findings will enable government and other key stakeholders including academia to help develop appropriate policies and programmes for ensuring good quality of life for all the people; particularly, women and children in the country. The survey results also facilitate the reporting progress on selected MDG indicators, besides defining the baseline values for several of the SDG indicators to support future socio economic development.

The collective effort of the National Coordinating Committee of the Ministry of Foreign Affairs, the CBS and the Population Centre and Population Institute, the UNFPA country team together with its international consultants is commendable. Last but not the least, the survey respondents have to be thanked for providing such valuable information without which the report would not have been possible.

Arie Hoekman

Representative, UNFPA China &
Country Director, UNFPA DPRK

ACRONYMS

ADL   Activities of Daily Living

ANC   Antenatal Care

CBR   Crude Birth Rate

CBS   Central Bureau of Statistics

CEB   Children Ever Born

CMR   Child Mortality Rate

CPR   Contraceptive Prevalence Rate

DHS   Demographic and Health Survey

DPRK   Democratic People's Republic of Korea

EA   Enumeration Area

FP   Family Planning

FSU   Final Sampling Unit

GFR   General Fertility Rate

ICF   International Classification of Functioning, Disability and Health

ICIDH   International Classification of Impairments, Disabilities and Handicaps

IFA   Iron and Folic Acid

IMR   Infant Mortality Rate

ISCO   International Standard Classification of Occupations

ISIC   International Standard Industrial Classification

IUD   Intra-Uterine Device

MICS   Multiple Indicator Cluster Survey

MIPAA   Madrid International Plan of Action on Ageing

MMR   Maternal Mortality Ratio

MOU	Memorandum of Understanding
NCC	National Coordinating Committee
NN	Neonatal Mortality
NNS	National Nutrition Survey
PC	Population Center
PI	Population Institute
PNN	Post-Neonatal Mortality
PPS	Probability Proportional to Size
PSU	Primary Sampling Unit
RHS	Reproductive Health Survey
SDHS	Socio-Economic, Demographic and Health Survey
SMAM	Singulate Mean Age at Marriage
TAC	Technical Advisory Committee
TFR	Total Fertility Rate
TT	Tetanus
U5MR	Under-5 Mortality Rate
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WHO	World Health Organization
WI	Whipple's Index

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Since the Census 2008, the country has been witnessing rapid development. In the absence of demographic development trend data, disaggregated at national and provincial level, the government perceived the need to conduct an inter-censal survey. As the first step to this end, the government--with technical support from UNFPA-initiated a nationwide household listing in 2013, to follow up with the collection of socio-demographic data through a comprehensive household survey in 2014. The 2013 household listing data was computerized by the end of January 2014.

Meanwhile, UNFPA was expected to start its third round of a Reproductive Health Survey (RHS) that had been conducted at four-year intervals since 2006 to better understand the progress made in its project areas, as against other areas, during the current cycle of the Country Programme. After discussions between UNFPA and its government counterparts, it was decided to combine the inter-censal survey with RHS on a cost-sharing basis and provide inter-censal estimates of social, economic, demographic and health indicators at national and provincial level, and by rural and urban areas. In the course of discussions, a module on elderly was included, as the population has been ageing and very little information was available about the living conditions of the elderly. It was decided to use the 2013 household listing data-frame for drawing the sample of households for the Social, Demographic Health Survey (SDHS) for 2014. In line with this decision, a Memorandum of Understanding (MoU) was signed between the DPRK National Coordinating Committee (NCC) and UNFPA. SDHS-2014 collected information from a nationally representative sample of 13,250 households, 10,035 ever-married women and 7,128 elderly persons.

Household Particulars

The SDHS-2014 observed differences in the access to various household amenities and rural-urban differentials, with urban areas having better access. The majority of the households resided in row houses (42%), followed by single/detached houses (33%), but the percentage of households currently living in apartments (25%) is likely to increase in the future. Access to drinking water

and flush toilet improved, as more households depended on protected sources of water-supply and had better access to private flush toilet facilities. The majority of urban and rural households had access to a heating system, but differed in the type of the system. Different types of heating fuel were used in urban and rural areas. Moreover, the majority of households had access to various consumer durables with rural households having higher ownership of live-stock in comparison with urban households. Thus, in all, the majority of households in the country, irrespective of place of residence, had access to basic amenities.

Nine out of 10 households were headed by male-members who were aged between 30 and 59 years and 3.9 members resided in each household on average.

Social and Economic Particulars of the Population

The population of the country has grown marginally after the Census 2008, from 23.3 million to 24.2 in 2014, implying an annual exponential growth rate of 0.61 and, as observed in the census, there are more women than men (90 men to 100 women). Thus, the sex ratio favours women in general and is pronounced in older ages, showing the feminization of ageing in the DPRK. The majority of the country's population resides in four contiguous provinces. Furthermore there has hardly been any change in overall population density (208 persons per km^2 in 2008 to 216 in 2014). Pyongyang has the highest density of population (1,402 persons per km^2). Regarding the age-sex distribution, the young age dependency has come down from 38 percent in 2008 to 33 percent in 2014 and old-age dependency has remained at the same level (22%), implying a slight increase in the working age population. Concerning the quality of age reporting, it seems to be good but due to historical events that have impacted certain age-cohorts, caution has to be exerted while interpreting the findings. The marital status distribution shows that the majority of women married at around 25 years of age, while men on average married three years later than women. The mean age at marriage for older female cohorts was marginally higher than the younger cohorts.

Reforms on compulsory education made in the past have worked well and because of it, a large proportion of the population is educated until secondary or senior secondary level or the cut-off age of 17 years. However, enormous male-female differentials exist at the tertiary and advanced education levels, despite marginal improvement in female attainment. The worrisome picture is that there is only a meagre proportion (1 in ten persons) that completes tertiary and advanced education. Investments in higher and specialized education perhaps

need to be the future focus and impetus to female education at tertiary and above levels is necessary.

On the economic front, employment is guaranteed to every citizen in the country. On completion of age 16, most young people begin to participate in various economic activities. Nearly seven out of 10 persons over 16 years of age are actively engaged in work. The proportion of rural persons working is marginally higher than urban which is also true for males compared to females. Province-wide variations are nominal, yet six out of 10 provinces had more than the national-level work participation rate. Age-wise work participation for men peaks between ages 40 and 44 years but is different between both gender categories, as women's work participation peaks between 25 and 29 years. The majority of the population is engaged in the primary sector and is more or less equally split between secondary and tertiary sectors. Rural participation in primary activities is high and likewise is the case for women.

Given our understanding that the working age population has increased and the demographic dividend is to be capitalized, there is a need for young people to have appropriate educational qualifications and skills as they are future contributors to the development of the country. With the majority of the youth population opting out after secondary or post-secondary level of education, the quality of youth labour force and the activities they are engaged in, needs to be closely examined. Efforts therefore are required to increase and enhance intake of more youth into higher education with a specific focus on women, if the country has to fully reap the benefits of the demographic dividend. Denying women an opportunity, especially when they constitute more than half of the country's population, is likely to impede the process of development.

Fertility and Fertility Intentions

Fertility has declined marginally since the Census 2008 from a total of 2.01 children born per woman to 1.89 in 2014. Likewise, the decline is seen both in urban and rural areas with a slightly higher decrease in rural areas. Because of the high female age at marriage, there is no contribution of adolescents to overall fertility. The largest contribution to fertility comes from age groups 25-34 with fertility peaking at ages 25-29 years. The median age at first birth for those between 20 and 49 years is as high as 24.9 years and the median duration of the birth interval, measured through the preceding birth, is close to three years. The desire for more children is limited and is extremely low for those who

have had more than two children. In addition, the percentage of childlessness also seems to be very low; perhaps the lowest among countries where data is available. These two aspects could be subjects for further investigation. Furthermore, the difference between wanted and unwanted fertility-gauged from the difference between ideal number of children and TFR is low at national level, though there are differentials across the provinces with about four provinces having higher actual fertility than the desired mean number of children. On the whole, the DPRK has done reasonably well in regulating its fertility and the preferences indicate that it may not further decline drastically in future.

Family Planning

The knowledge of at least one family planning method is almost universal among women in the DPRK, though awareness of method--specific modern methods varies. On average, women are aware of six methods. Trends indicate that between 2010 and 2014, the contraceptive prevalence rate (CPR) increased by two percentage points each year. Current use of any method is 78 percent in 2014 with 77 percent relying on modern methods. Modern method use is dominated by IUD, which constitutes no less than 98 percent of all modern methods. Use of limiting methods and other types of spacing methods is negligible. The majority of current use is coming from women above 30 years of age and their current use is twice that of women younger than 30 years. The major source of availing family planning services remains the county/district hospitals.

Informed choice is limited to explaining more about IUD in comparison to other methods, which in a way brings out issues of service provisions for contraceptives in the national programme and provider's bias as well. Despite over-reliance on one contraceptive method, it is noteworthy that more than 90 percent of demand for family planning has been satisfied, but at the same time unmet need for limiting is higher than that of spacing, and service provision for limiting methods seems to be inadequate. Moreover, it is distressing to know that more than one-seven of the 10 percent of women who underwent abortion did not want another child and 11 percent of them wanted to space. In the absence of wider varieties and choices of contraceptives, women with unwanted and mistimed pregnancies resort to induced abortion. This implies there is a need to review service provisions, and increase the capacity of service providers for offering limiting methods and accordingly programmes and communication strategies will have to be evolved.

Reproductive Health

Availing antenatal care (ANC) services during pregnancy is almost universal and all of the women who were pregnant three years before the survey received antenatal care from skilled providers. While nine out of ten urban women received care from a doctor/assistant doctor, it is nearly three quarters in case of rural women. Province-wide variations are apparent. In case of number of ANC visits, the WHO recommends a minimum of four visits. All the women who availed ANC services, visited more than four times and nearly three quarters of women visited more than 10 times for the services during their pregnancy, as against national norm of 17 visits in 2014. Regarding the timing of the first visit, 85 percent visited in the first trimester, 13 percent in second trimester and the remaining in the third trimester. During the ANC visits, the majority of women reported different services availed as per the standard package of services and all of them were either highly satisfied or satisfied. Surprisingly, one quarter of women who had received IFA and micro-nutrient supplementation had not taken it at all.

Regarding place of delivery, three-quarter of births occurred in county and ri hospitals/clinics, 17 percent in central/provincial hospitals and the remaining nine percent at home. In other words, about one in ten births in the DPRK are taking place at home, but skilled assistance at birth is nearly 100 percent. Even home births received skilled assistance at the time of delivery. Obviously, urban areas fared better than rural areas and as observed earlier in case of ANC services, satisfaction levels are very high. Few of the women experienced complications following the delivery and the commonly cited responses are infection, inflammation of the breasts and blood loss. An overwhelming 87 percent reported of post-partum care within 48 hours and the degree of satisfaction is similar to the earlier observations. Concerning the timing of breastfeeding of the new-born, a third fed the child within five hours, another 35 percent within a day, 29 percent between 1 and 3 days and about one percent did not feed at all. Thus, 68 percent of women fed their children within a day with breastfeeding for 5-6 months reported by over half the women, who delivered three years before the survey, and a significant percentage still breastfeeding their children.

Mortality

The mortality levels have come down marginally since 2008. The crude death rate has declined from 9.0 in 2008 to 8.4 in 2014. The expectancy of life at birth is 72

years: 68.2 for males and 75.6 years for females: and has witnessed an increase; yet the difference between male and female life expectancies at birth has not narrowed down. However, the increase in the overall life expectancies is slowly bouncing back to where it was in 1993. The neonatal, post neonatal and infant and child mortality levels have all come down in the past 15 years. The IMR is 13.7 deaths per 1,000 live births and under-5 mortality is 16.2. In case of estimation of maternal mortality, not enough number of deaths could be ascertained through the survey and hence, we had to use the civil registration data with adjustments. After the Census 2008, a Maternal Mortality Validation exercise was undertaken, the MMR obtained from census estimation and civil registration revalidated. Assuming the correction factors evolved then, it was applied to the civil registration data-set and MMR derived. The MMR thus obtained through this method has depicted a decline in trends from 85.1 in 2008 (adjusted after the MMR Validation Study, 2009) to 65.9 in 2014, which is also reinforced by the two decadal MMR analysis published by the United Nations (2015).

Population Ageing

Self-rated health and functionality among elderly are examined. The analysis of self-rated health shows that one in three of the elderly rates their health as poor or fair on a five-point scale. The functionality is measured in the survey through ADL as well as locomotor disability. The study shows that over eight percent of the elderly in the country have functionality problems and about half of them needed assistance with at least three activities necessitating care and support. The prevalence of locomotor limitations is much higher with nearly one-fifth of the elderly having mobility problems. The social gradient was evident for ADL and locomotor disability although it was mainly a function of age. Overall, the study highlighted several challenges and opportunities for civil society and the government. First, there is a lot to be desired in the health status of the elderly and efforts are necessary to enhance their situation. Second, the magnitude of functional disability is an indicator of the gap that may be created between care providers and care receivers. With the proportion likely to increase in the future, the public system will have to invest in geriatric care services and gerontology as a discipline and will have to be introduced into the medical and nursing educational curricula. Finally, the social gradient indicates that the health problems of the elderly need to be addressed from a life-course perspective rather than in isolation.

CHAPTER 1.INTRODUCTION

1.1. Background

The Democratic People's Republic of Korea (DPRK) carried out the second population census in 2008 with technical and financial support from UNFPA. The Census 2008 was the first census conducted according to international principles and recommendations and provided comprehensive data on the demographic and socio-economic profile of the population of the country. The results have been recognized and extensively used by government and international agencies for programming, planning, and monitoring/evaluation of policies and programmes.

Since the Census 2008, the country has been witnessing rapid development. In the absence of demographic development trend data, disaggregated at national and provincial level, the government deemed it important to conduct an inter-censal survey. As the first step to this end, the government--with technical support from UNFPA--initiated a nationwide household listing in 2013, to follow up with the collection of socio-demographic data through a comprehensive household survey in 2014. The 2013 household listing data was computerized by the end of January 2014.

Meanwhile, UNFPA was expected to start the third round of a Reproductive Health Survey (RHS) that had been conducted at four-year intervals since 2006 to basically understand the progress it has made in its project areas as against other areas during the current cycle of the Country Programme. After discussions between UNFPA and its government counterparts, it was decided to combine the inter-censal survey with RHS on a cost-sharing basis and provide inter-censal estimates of social, economic, demographic and health indicators at national and provincial levels, and by rural and urban areas. Further, it was decided to use the 2013 household listing data-frame for drawing the sample households for the Social, Demographic Health Survey (SDHS) for 2014. In line with it, a Memorandum of Understanding (MoU) was signed between the National Coordinating Committee (NCC) and UNFPA.

In this respect, it has to be stated that the DPRK is following a new international trend towards combining traditional census taking at long intervals with more in-depth inter-censal surveys. This is an important decision for a number of reasons: a) the 2008 census data has been the only reliable source of population information, but is now already six years old and needs to be updated to keep track of the population dynamics and socio-economic development; b) the country is still experiencing a chronic humanitarian problems in many areas, such as food security, health, nutrition, water and sanitation, and agriculture. This requires more specific population data with which to target and plan internal resources and external assistance so as to address the challenges faced by the country.

1.2. Survey Objectives

The Central Bureau of Statistics (CBS) is the government agency tasked with the collection of statistics on the social and economic situation of the country, including the conduct of population censuses and surveys. Typical of centrally planned economies, the current statistical system of the DPRK is based largely on administrative data compiled from reports coming from various administrative units of the government. Efforts to build the capacity of the CBS by international agencies, particularly UNFPA and UNICEF which provided support in conducting the Census 2008, 2009 MICS, and 2010 Reproductive Health Survey, have partially addressed the need for producing quality data and making an analysis for facilitating evidence-based social development planning and implementation. Although in many ways the overall capacity of CBS has been strengthened through the Census 2008, the current technical capacity and existing infrastructure are still inadequate due to its limited access to the latest knowledge and technologies used for conducting household surveys.

Thus, the specific objectives of the survey are to:

- Provide an updated database on and analysis of demographic and socio-economic characteristics of population for informed policy and decision making;

- Provide data on the progress made by UNFPA in project areas as against other areas during the current cycle of its Country Programme;

- Build the technical and operational capacity of the Central Bureau of Statistics and key government agencies to plan and implement complex household surveys; and

- Improve the capacity of population and survey experts of CBS and other relevant institutions (the Population Centre and the Population Institute--**Kim Il Sung** University) to carry out in-depth statistical and demographic analysis of survey data.

1.3. Questionnaires

Since the survey involved a combination of inter-censal survey and RHS, a Technical Advisory Committee (TAC) was formed and had representation from NCC, CBS, the Population Centre (a research unit), the Population Institute (a research and teaching unit within the Department of Economics, **Kim Il Sung** University) and UNFPA. The indicators that need to be captured were decided upfront through a consultative process and later the chapterisation, questionnaire and tabulation plan were finalized.

It is worth noting that a separate section on health aspects of elderly was included for the first time. With clear understanding of the indicators and chapterisation, it was decided to develop three types of questionnaires covering specific particulars from household, eligible women and elderly, thus allowing direct comparison of trends in selected social, economic, demographic and health indicators produced by Census 2008 and RHS 2010 respectively.

An outline of the three questionnaires is given below:

1. *Household Questionnaire*

- Identification Particulars

- Dwelling Unit Particulars

- Household Roster covering basic information (relationship to head, age, sex, marital status, migrant status, literacy, education and economic activities) of all registered and unregistered household members

- Mortality in the past 12 months and particularly of women 15-49 years

2. *Woman's Questionnaire (Ever-Married Women 15-49 years)*

- Background characteristics

- Reproduction

- Birth History

- Contraception and Unmet Need for Contraception

- Fertility Preferences

3. *Elderly Questionnaire (Elderly Persons 60+ years)*

- Background characteristics

- Self-Assessment of Physical Condition

- Perception regarding their own health

- Activities of Daily Living (ADL)

The finalization of the questionnaires was consultative and went through an iterative process. After pre-testing of the questionnaires, they were fine-tuned and finalized. The translation of the questionnaires into Korean was carried out by CBS and was peer-reviewed by different stakeholders, including UNFPA, subsequent to which it was printed by CBS.

1.4. Sample Design and Implementation

In the foregoing discussions, it has been mentioned that SDHS is a combination of an inter-censal household survey and RHS and therefore the sampling design had to produce representative results for UNFPA project areas in comparison to others, as well as providing estimates of major social, economic, demographic and health indicators at national and provincial level and by urban and rural areas. Barring estimates of the Maternal Mortality Ratio (MMR), an adequate sample has been made to provide estimates of major indicators by province, urban-rural residence and for project and non-project areas. An international consultant was specifically hired for sampling.

The 2013 listing of households that has been used for drawing the sample showed a marginal increase in population from 23.3 million in 2008 to 24.1

million in 2013 with an annual population growth of around 0.6 percent. Seven out of 10 provinces witnessed higher than national population growth rates. Table 1.1 shown below provides an overview of the household listing exercise undertaken in 2013. This listing served as the frame for drawing the sample. A two-stage, stratified cluster sampling design follows considering Enumeration Area (EA) as the Primary Sampling Unit (PSU) in both urban and rural areas.

Table 1.1: Population, Households and Enumeration Areas by Project and Non-Project Areas, Urban-Rural Residence, and by Province, DPRK 2013 Household Listing

Population

Province	Non-project			Project			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Total	14,172,784	8,447,608	22,620,392	539,799	896,404	1,436,203	14,712,583	9,344,012	24,056,595
Ryanggang	477,818	264,370	742,188	0	0	0	477,818	264,370	742,188
N.Hamgyong/ Rason	1,747,771	650,664	2,398,435	0	0	0	1,747,771	650,664	2,398,435
S. Hamgyong	1,667,819	961,793	2,629,612	191,385	319,325	510,710	1,859,204	1,281,118	3,140,322
Kangwon	647,027	579,811	1,226,838	86,602	210,741	297,343	733,629	790,552	1,524,181
Jagang	852,594	487,462	1,340,056	0	0	0	852,594	487,462	1,340,056
N. Phyongan	1,494,683	1,318,210	2,812,893	0	0	0	1,494,683	1,318,210	2,812,893
S. Phyongan/ Nampho	2,498,776	1,101,886	3,600,662	239,347	307,964	547,311	2,738,123	1,409,850	4,147,973
N. Hwanghae	971,368	1,106,279	2,077,647	22,465	58,374	80,839	993,833	1,164,653	2,158,486
S. Hwanghae	860,535	1,532,305	2,392,840	0	0	0	860,535	1,532,305	2,392,840
Pyongyang	2,954,393	444,828	3,399,221	0	0	0	2,954,393	444,828	3,399,221

Households

Province	Non-project			Project			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Total	3,689,427	2,149,577	5,839,004	141,787	229,142	370,929	3,831,214	2,378,719	6,209,933
Ryanggang	125,642	66,741	192,383	0	0	0	125,642	66,741	192,383
N.Hamgyong/ Rason	453,724	166,450	620,174	0	0	0	453,724	166,450	620,174
S. Hamgyong	435,366	245,100	680,466	50,385	83,111	133,496	485,751	328,211	813,962
Kangwon	166,234	147,484	313,718	22,674	53,448	76,122	188,908	200,932	389,840
Jagang	222,390	122,404	344,794	0	0	0	222,390	122,404	344,794
N. Phyongan	392,867	336,726	729,593	0	0	0	392,867	336,726	729,593
S. Phyongan/ Nampho	655,224	280,436	935,660	62,687	77,656	140,343	717,911	358,092	1,076,003
N. Hwanghae	252,302	282,671	534,973	6,041	14,927	20,968	258,343	297,598	555,941
S. Hwanghae	226,164	386,281	612,445	0	0	0	226,164	386,281	612,445
Pyongyang	759,514	115,284	874,798	0	0	0	759,514	115,284	874,798

Enumeration Areas

Province	Non-project			Project			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Total	18,464	14,509	32,973	703	1,495	2,198	19,167	16,004	35,171
Ryanggang	596	431	1,027	0	0	0	596	431	1,027
N.Hamgyong/ Rason	2,350	1,082	3,432	0	0	0	2,350	1,082	3,432
S. Hamgyong	2,174	1,516	3,690	231	509	740	2,405	2,025	4,430
Kangwon	821	1,006	1,827	127	335	462	948	1,341	2,289
Jagang	1,154	861	2,015	0	0	0	1,154	861	2,015
N. Phyongan	1,912	2,489	4,401	0	0	0	1,912	2,489	4,401
S. Phyongan/ Nampho	3,384	1,903	5,287	326	486	812	3,710	2,389	6,099
N. Hwanghae	1,343	1,912	3,255	19	165	184	1,362	2,077	3,439
S. Hwanghae	1,124	2,569	3,693	0	0	0	1,124	2,569	3,693
Pyongyang	3,606	740	4,346	0	0	0	3,606	740	4,346

In an overall sample size of 13,250 households, 1,250 and 12,000 households were assigned to project and non-project areas respectively. Basically, oversampling of households has been done for project areas and between urban and rural areas within each province to ensure a minimum sample size. This oversampling resulted in differences in the probabilities of being selected in the sample among households and individuals. These differences were adjusted through the application of different sampling weights at the time of analysis. Since EA information was made available, it was decided to draw the sample directly for each province proportionally between urban and rural areas, and apply oversampling whenever necessary.

The 2013 household listing of selected EAs was updated immediately before the start of the fieldwork in order to provide an up-to-date second-stage sampling frame. In the second sampling stage, 25 households were systematically drawn in each EA. The sample size of each province ranged between 1,200 and 1,600 households. The final distribution of selected households by urban-rural, province, and project and non-project areas is presented in Table 1.2. Appendix 1 provides more detailed information about the sampling design.

Table 1.2: Distribution of Sampled Households and EAs, by Province 2014

Sampled EAs

Province	Non-project			Project			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Total	290	190	480	19	31	50	309	221	530
Ryanggang	33	17	50	0	0	0	33	17	50
North Hamgyong/Rason	37	13	50	0	0	0	37	13	50
South Hamgyong	29	16	45	7	11	18	36	27	63
Kangwon	24	21	45	3	7	10	27	28	55
Jagang	32	18	50	0	0	0	32	18	50
North Phyongan	27	23	50	0	0	0	27	23	50
South Phyongan/Nampho	32	13	45	8	11	19	40	24	64
North Hwanghae	21	24	45	1	2	3	22	26	48
South Hwanghae	18	32	50	0	0	0	18	32	50
Pyongyang	37	13	50	0	0	0	37	13	50

Sampled Households

Province	Non-project			Project			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Total	7,250	4,750	12,000	475	775	1,250	7,725	5,525	13,250
Ryanggang	825	425	1,250	0	0	0	825	425	1,250
North Hamgyong/Rason	925	325	1,250	0	0	0	925	325	1,250
South Hamgyong	725	400	1,125	175	275	450	900	675	1,575
Kangwon	600	525	1,125	75	175	250	675	700	1,375
Jagang	800	450	1,250	0	0	0	800	450	1,250
North Phyongan	675	575	1,250	0	0	0	675	575	1,250
South Phyongan/Nampho	800	325	1,125	200	275	475	1,000	600	1,600
North Hwanghae	525	600	1,125	25	50	75	550	650	1,200
South Hwanghae	450	800	1,250	0	0	0	450	800	1,250
Pyongyang	925	325	1,250	0	0	0	925	325	1,250

In regard to the response rates, interviews in almost all the selected households could be completed, yielding a household response rate of 99.9 percent and almost universal coverage of identified eligible women and elderly in the households. This was true across all the provinces and urban and rural areas as well.

1.5. Recruitment, Training and Fieldwork

Since CBS is the agency responsible for undertaking Censuses and Surveys, it has a full-time administrative structure in place at national, provincial and county levels. The existing human resources of CBS along with staff members

from PC have been employed for undertaking the survey. These field interviewers and supervisors are experienced staff members and participated in collecting data during the Census 2008 and the 2013 household listing. Furthermore, they have been engaged in several small-scale social, economic and health surveys and collected administrative data on a regular basis. Nearly 200 field interviewers/supervisors were deputed for data collection activities; i.e. an average of 20 interviewers per province.

Before the field interviewers' training, the Training of Trainers Workshop was held in Pyongyang between August 18th and 21st, 2014. Fifteen participants from CBS and PC were trained by an international consultant, and by UNFPA and CBS. The training sessions included lectures, discussions and module by module explanation of the questions and their responses, and mock and practice sessions. These apart, guest lectures on reproductive health and family planning were also held. The trainers were to exactly replicate these instructions during the training of interviewers and therefore all the training materials and presentations were later translated into Korean.

CBS organized the field interviewers' training, which was held at two venues concurrently between September 15th and 18th, 2014; one in the eastern region for eastern provinces and the other in the western region for western provinces. In all, 190 field interviewers and supervisors were trained in parallel groups with each having about 30 persons and (three parallel batches in each venue) to ensure manageable numbers for imparting quality training. UNFPA local staff members participated in these training programmes, both as participants and observers.

In regard to field team formation, 4-5 teams each comprising three interviewers and one supervisor were formed for each province depending on the sample size. While the field interviewers were from the respective provinces, the supervisors were drawn from CBS and PC. To ensure smooth and quality work, an additional layer of Province Coordinators was created for the survey and one person from CBS was made responsible for 1-2 provinces. All together 43 teams were formed to cover the entire country. A field movement plan, interviewer's assignment sheet and supervisor's monitoring sheet were all prepared by CBS in consultation with UNFPA and shared so that UNFPA could undertake independent field monitoring. Besides, a logistics plan was also prepared for movement of

vehicles, maintenance of logbooks and collection of completed questionnaires that were all strictly adhered to.

The fieldwork started on October 1st, 2014 simultaneously across the country. However, hilly and mountainous provinces were taken up first, due to the approaching winter season. The fieldwork was completed by October 31st, 2014 in all provinces.

1.6. Quality Assurance during Survey

In order to ensure that high quality data were collected UNFPA--apart from the monitoring of CBS--devised its own quality control strategy. After analysing various options, UNFPA decided to cover all provinces and randomly visit two to three teams in each province. This resulted in visiting 23 out of the total 43 teams over 15 missions during the month of October 2014. To facilitate proper field monitoring and ensure consistency among UNFPA staff members, a brief guide for quality monitoring was prepared. This guide provided details of key aspects to be checked in household listing and household, women and elderly questionnaires. All the UNFPA staff members, both international' and nationals were then oriented in-house and field survey was accordingly monitored. It is worth mentioning that NCC facilitated the process and UNFPA staff could select and visit households randomly, undertake back-checks and spot-checks during the visits and with the assistance of national staff members discuss freely with all field interviewers and supervisors. On the whole, the fieldwork went about smoothly and inevitable small errors and inconsistencies that were observed were promptly corrected by the field interviewers after re-visiting the selected households.

1.7. Tabulation and Analysis

A detailed chapter-wise tabulation plan was drawn up in line with the objectives of the survey by the international consultant, CBS and UNFPA. In consultation with end users, it was decided to produce basic priority tables at national and provincial levels. These tables cover most of the topics included in the SDHS 2014 questionnaires and their cross classification should satisfy most of the requirements of all sections of end users.

Analysis of the survey data will include the following topics: (i) Housing characteristics and household amenities; (ii) Population growth, size and spatial distribution including assessment of quality of age data; (iii) Literacy and educational attainment; (iv) Economic activity and employment status; (v) Fertility and fertility intentions; (vi) Family planning; (vii) Maternal health; (viii) Maternal, infant and child mortality; (ix) Migration; and (x) Health aspects of elderly.

A separate analytical report on each of these topics is expected to be prepared later. For this purpose a workshop will be held for each subject involving the national staff, not only within the CBS but also from other line Ministries concerned and will also include the PI--**Kim Il Sung** University. This will not only help programmatically but also enhance the capacity of the faculty and students of PI, who are undergoing the Bachelor's Programme in Demography. This exercise will afford an opportunity to the staff concerned to interact with each other and study the survey results and draw conclusions which could be incorporated in the respective analytical reports.

1.8. Data Processing

During discussions with the technical group and CBS, it was recommended to use the latest version of CSPro (6.01) for data entry and editing and both CSPro and SPSS for tabulation and data analysis. Accordingly, the international consultant developed data entry software on CSPro. To ensure high quality data, it was decided to use dependent double entry of the data, i.e. operator's key in data a second time and have CSPro immediately control the input that was keyed in the first time. To learn the ins and outs of data entry, the international consultant trained eight staff members from CBS and PC for two days on August 24th and 25th, 2014. A two-day training of 20 operators was later organized by CBS on October 13-14, 2014 in Pyongyang. Initially, it was agreed to have a combination of manual and automated data editing, but later CBS decided to completely go for automated editing. Hence, automated editing programmes had to be developed on a CSPro platform. Editing programs included tests on the structural integrity of the data file, and a large number of checks on valid values and the internal consistency between sets of variables. As far as processing of the data is concerned, both CSPro and SPSS have been used.

1.9. Data Dissemination

The report mentioned in the tabulation and analysis plan will be produced, printed, published and disseminated in the second quarter of the year 2015 along with dedicated fact sheets. There will be one national-level dissemination workshop and this will be followed up with two regional-level dissemination workshops. Off-line electronic dissemination will be mainly in the form of flash drives. Seminars for the presentation of the survey results and workshops to train planners in the line Ministries and other data users, especially researchers, faculty and students from PI-- **Kim Il Sung** University, will be held during the last quarter of 2015.

1.10. Limitations of SDHS

The various estimates presented in this report are derived from a sample of the surveyed population. As in any such survey, these estimates are subject to both sampling and non-sampling errors. Like all sample surveys the results of the present survey are estimates and might vary from the true value in the population. Nonetheless the demographic, social and economic indicators produced are broadly comparable with earlier census and survey results, thereby serving as a measure of change over time, and they are useful for planning and monitoring. While this is a technical observation, there were other external factors that slowed down the SDHS activities. The introduction of Ebola Quarantine in the country put on hold all in-coming missions and hence there was a delay in the preparation of the report.

CHAPTER 2. HOUSING CHARACTERISTICS AND HOUSEHOLD COMPOSITION

This chapter elucidates two components related to households. The first part examines the housing characteristics by type of household: access to different basic amenities of water, sanitation, electricity and heating system and possession of consumer durables/household effects and live-stock, while the second part analyses and presents the composition of households by head of household the age and sex of household head and household size.

2.1. Housing Characteristics

2.1.1. Type of Dwelling Units

Table 2.1 shows the distribution of dwelling units by the type of dwelling in the DPRK. The majority of households in 2014 resided in row houses (42%), followed by single or detached houses (33%) and apartments (25%).

Table 2.1: Percentage Distribution of Dwellings by Dwelling Type, SDHS-2014, DPRK

Sr. No.	Housing Type / Province	Single Detached	Row	Apartment	Other	Total
1	Ryanggang	18.8	68.5	12.1	0.6	100.0 (1,249)
2	North Hamgyong / Rason	25.5	53.2	20.6	0.7	100.0 (1,249)
3	South Hamgyong	32.0	46.8	20.9	0.3	100.0 (1,573)
4	Kangwon	34.8	44.1	20.3	0.8	100.0 (1,373)
5	Jagang	38.0	38.8	22.8	0.4	100.0 (1,249)
6	North Phyongan	43.9	38.6	17.2	0.3	100.0 (1,249)
7	South Phyongan / Nampho	23.8	52.5	23.1	0.6	100.0 (1,598)
8	North Hwanghae	63.3	24.4	11.8	0.5	100.0 (1,199)
9	South Hwanghae	46.1	39.6	13.5	0.8	100.0 (1,249)
10	Pyongyang	11.8	24.8	62.9	0.5	100.0 (1,249)
	Total	**32.8**	**41.7**	**25.0**	**0.5**	**100.0 (13,237)**

Note: weighted % and unweighted cases

Variations across the type of dwelling units are significant between and within provinces.   It is seen that over six out of ten households in North Hwanghae reside in single/detached units while an equal proportion of Pyongyang households live in apartments.   On the other hand, seven out of ten households in Ryanggang reside in row houses.

Figure 2.1: Dwelling type by Population Distribution, SDHS-2014, DPRK

If the population of the country is juxtaposed by dwelling units, it can be observed from Figure 2.1 that one third of the dwellings that are single or detached account for one third of the population of the country. Likewise, 42 percent of dwellings that are row houses account for 41 percent of the population and the remaining quarter of dwellings that are apartments account for a quarter of the country's population. In other words, there is a one-to-one correspondence between the percentage distribution of type of dwelling and the distribution of population they account for.

Concerning the changes in dwelling type since the Census 2008 (Figure 2.2), there has been an increase in the proportion of apartments while a consequent decline in row and single/detached dwellings has been witnessed.

Figure 2.2: Households by Dwelling Type, DPRK
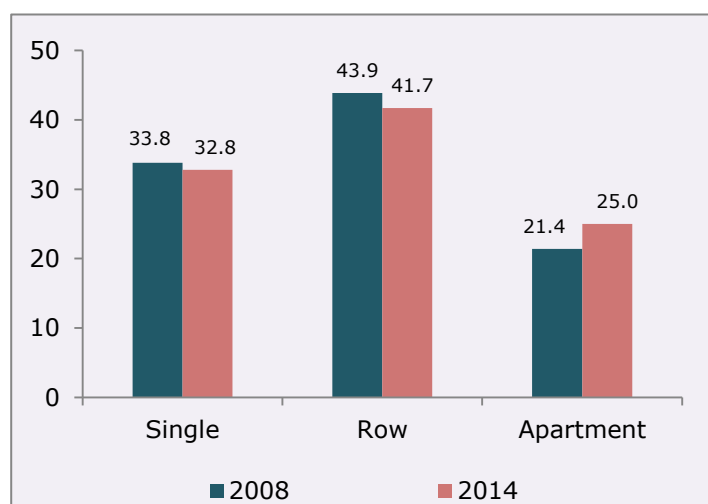
2.1.2. Housing Amenities--Access to Water

The main source of water supply is piped water into the dwelling unit (82.1 percent) followed by tube-well/borehole (10.5 percent). The two sources together account for over 90 percent of all dwellings. A small percentage depends on public tap or a protected waterhole while an insignificant percentage depends on unprotected sources. Access to piped water within dwelling is obviously better in urban areas while on the other hand, access to tube-well/borehole was twice higher in rural than in urban areas.

Table 2.2: Percentage of Dwellings by Main Water Supply according to Place of Residence, SDHS-2014 DPRK

Main Source of Water Supply	Place of Residence		
	Urban	Rural	Total
Piped water into dwelling unit	86.8	74.6	82.1
Public tap	2.2	2.0	2.1
Tube-well/Borehole	7.5	15.4	10.5
Protected waterhole	2.8	6.1	4.1
Protected spring & Others	0.7	1.9	1.2
Total	100.0 (7,716)	100.0 (5,521)	100.0 (13,237)

Figure 2.3: Source of Water Supply, DPRK
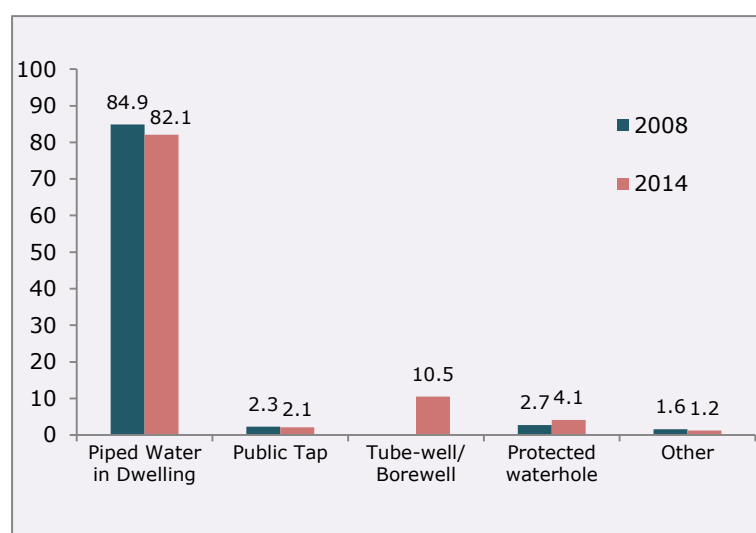
A comparison of trends between the Census 2008 and SDHS-2014 reveals that dependency on tube-well/borehole and protected well has marginally increased with a consequent decline in other sources of water supply (Figure 2.3), implying that the percentage of rural dwellings increased dependency on tube-well/borehole.

2.1.3. Housing Amenities--Access to Toilet

Regarding the type of toilet facility, private flush toilet turns out to be the most common source with over 6 out of 10 dwellings depending on it, followed by private pit latrine. The two sources together accounted for more than 90 percent. In urban areas, 71 percent reported private flush toilet as the main source followed by private pit latrine while in rural areas, half of the households reported private flush toilet and the remaining half private pit latrine.

Table 2.3: Percentage of Dwellings by Type of Toilet according to Place of Residence, SDHS-2014 DPRK

Main Source of Toilet Facility	Place of Residence		
	Urban	Rural	Total
Flush toilet, private	71.0	48.7	62.5
Flush toilet, shared	1.1	0.2	0.7
Pit latrine, private	20.6	49.0	31.5
Pit latrine, shared	7.3	2.1	5.3
No facility	0.0	0.0	0.0
Total	100.0 (7,716)	100.0 (5,521)	100.0 (13,327)

Figure 2.4: Type by Toilet Facility, DPRK
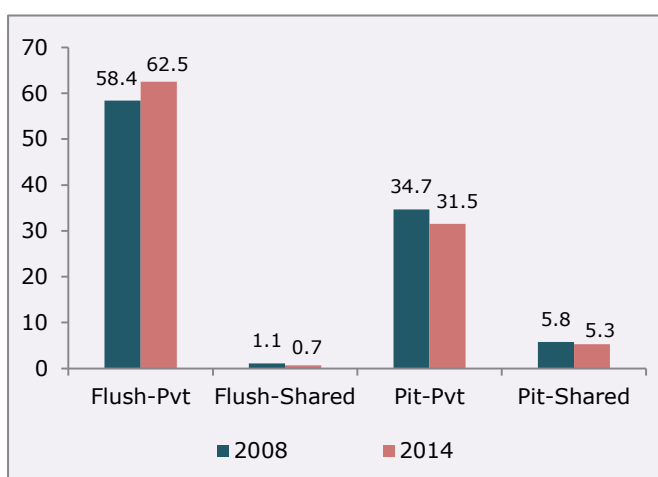
A comparison of trends between the Census 2008 and SDHS 2014 indicates that access to private flush toilet has increased while a decline in other sources is observed (Figure 2.4), implying that there is an improving trend of access to private flush toilet facilities in rural areas. This finding seems to be in the right direction when compared with Census 2008 results.

2.1.4. Amenities in the Dwelling Units--Access to Heating System

In table 2.4, it can be observed that coal and wood heating systems are the most common sources of heating among the dwellings in the country. While coal heating is used by three quarter of urban dwellings, an equal proportion of rural dwellings use wood heating system. The use of a central or local heating system is more confined to urban areas and it is used by one-tenth of dwellings.

The SDHS provided multiple response options to this question, while the Census 2008 captured the information as a single response. Hence, it is difficult to compare the two sources, yet it can be inferred that the overall trend at the country level has remained more or less the same.

Table 2.4: Percentage of Dwellings by Heating System according to Place of Residence, SDHS-2014 DPRK

Main Sources of Heating System*	Place of Residence		
	Urban	Rural	Total
Central or local heating system	9.9	0.1	6.1
Electric heating system	2.5	0.4	1.7
Coal heating system	73.3	29.4	56.5
Wood heating system	32.4	75.2	48.8
Others	0.2[+]	1.0	0.5
Total	7,716	5,521	13,237

Multiple responses; +Cell frequency<25

2.1.5. Amenities in the Dwelling Units--Access to Cooking Fuel

Deductions from Table 2.5 indicate findings similar to that of heating system. The majority of dwellings depend on coal and wood as sources of cooking fuel with an overwhelming majority on coal in urban areas and wood in rural areas. Although, it is difficult to make a straight forward comparison with the 2008 Census results, due to multiple responses captured in SDHS 2014 for this question, it can nonetheless be concluded that the dependency on coal and wood has increased despite marginal improvements in use of electricity and gas.

Table 2.5: Percentage of Dwellings by Use of Different Types of Cooking Fuel according to Place of Residence, SDHS-2014 DPRK

Different Types of Fuel*	Place of Residence		
	Urban	Rural	Total
Electricity	6.1	2.0	4.5
Gas	6.3	0.4	4.0
Petroleum	2.4	0.5	1.7
Coal	72.8	28.9	56.0
Wood	33.0	84.3	52.6
Others	0.7	0.9	0.8
Total	(7,716)	(5,521)	(13,237)

Multiple Responses

2.1.6. Amenities in the Dwelling Units--Possession of Household Effects

As far as possession of household effects is concerned, almost all the households are electrified and have electricity connections. Possession of television is almost universal and is higher than radio ownership (88%). Over four fifths of the households have at least one bicycle, three fifths own a rice cooker and two fifths each have a landline telephone and a deep freezer or refrigerator respectively (Table 2.6). Even though possession of household effects is higher in urban areas, there is very little difference in possession of television, radio and bicycle, which was marginally higher in rural areas. However, for items such as a landline telephone, a refrigerator/deep freezer and a rice cooker, the differentials are large. From the foregoing, it can be inferred that household possession is better among urban households than among rural households.

Table 2.6: Percentage of Dwellings by Household Effects according to Place of Residence, SDHS-2014 DPRK

Different Types of Household Effects	Place of Residence		
	Urban	Rural	Total
Electricity	100.0	100.0	100.0
A radio	89.7	83.9	87.5
A television	99.5	98.8	99.2
A bicycle	82.4	84.3	83.1
A landline telephone	60.7	11.8	42.0
A refrigerator/deep freezer	60.8	19.4	44.9
A rice cooker	69.3	45.4	60.1
Total	**7,716**	**5,521**	**13,327**

2.1.7. Livestock Ownership

About two thirds of households in the country reported having live-stock in their household. More than 40 percent of households have more than five live-stocks. Expectedly, owning livestock is higher in rural areas than in urban areas and more than 80 percent of rural households have more than five live-stocks.

Table 2.7: Percentage of Dwellings by Live-Stock Ownership according to Place of Residence, SDHS-2014 DPRK

Live-Stock Ownership	Place of Residence		
	Urban	Rural	Total
No livestock	49.0	2.7	31.3
1-2	24.9	8.6	18.6
3-4	13.1	5.0	10.0
5-9	8.6	32.0	17.5
10+	4.4	51.7	22.6
Total	100.0 (7,716)	100.0 (5,521)	100.0 (13,327)

2.2. Household Composition

This sub-section deals with the composition of the household as to who heads the household, how many members live in the household and what is the age-sex distribution of head of the household. All these elements have been analysed and presented in Tables 2.8 and 2.9 respectively.

Ninety-three percent of households in the country are headed by a male family member and the mean number of members per household is 3.9. About 63 percent of households have four or more members and a negligible percent of single member households is observed. A similar pattern is seen in urban and rural areas. Concerning the age-distribution of the head of households, 85 percent are between ages 30 and 59 years and about five percent are less than 30 years of age while the remaining 10 percent of households are headed by an elderly person aged 60 years and above. The percentage of women-headed elderly households is slightly higher than that of men-headed households. This pattern is true in rural areas but the other way around in urban areas. Nonetheless, urban and rural areas conform to the overall observations.

Table 2.8: Percentage of Dwellings by Sex of the Household Head according to Place of Residence, SDHS-2014 DPRK

	Place of Residence (%)		
	Urban	Rural	Total
Sex of Household Head			
Male	93.2	93.1	93.2
Female	6.8	6.9	6.8
Number of Household members			
1	1.0	0.7	0.9
2	14.2	11.8	13.3
3	22.5	23.7	22.9
4	35.2	34.0	34.7
5+	27.1	29.8	28.2
Mean number of household members	**3.8**	**3.9**	**3.9**
Total	100.0 (7,716)	100.0 (5,521)	100.0 (13,327)

Table 2.9: Age Distribution of Household Headship by Sex and Place of Residence, SDHS-2014 DPRK

Age of Household Head	Sex of Household Head		
	Male	Female	Total
Urban			
<30	4.7	6.2	4.8
30-59	84.8	84.1	84.8
60+	10.5	9.7	10.4
Total	100.0 (7,185)	100.0 (531)	100.0 (7,716)
Rural			
<30	5.6	8.5	5.8
30-59	84.6	80.0	84.3
60+	9.8	11.6	9.9
Total	100.0 (5,140)	100.0 (381)	100.0 (5,521)
Total			
<30	5.0	7.1	5.2
30-59	84.7	82.5	84.6
60+	10.2	10.4	10.2
Total	100.0 (12,325)	100.0 (912)	100.0 (13,237)

CHAPTER 3. SOCIAL AND ECONOMIC CHARACTERISTICS OF THE POPULATION

Basic demographic characteristics of the de facto population related to growth and distribution, age-sex composition, sex-ratio, population density, dependency ratio, marital status distribution and mean age at marriage of men and women by selected background characteristics have been analysed by extrapolating the sample population and comparing it with the Census 2008 results and other available sources. In addition, the quality of age-reporting in the survey has been examined using the standard demographic approaches. Subsequently, literacy and education status and workforce participation of the population have all been discussed in this chapter.

3.1. Population Growth and Distribution

Table 3.1 provides the distribution and growth of population at the national level. It is observed that the population of the country increased from 23.35 million in 2008 to 24.21 million in 2014. The exponential annual pace of increase has been 0.61 percent and urban areas increased at the rate of 0.75 percent as against 0.38 in rural areas. More than six out of ten persons reside in urban areas in the country. The proportion living in urban areas has marginally increased. This may be attributed to delimitation or boundary changes witnessed during the interim period. Nevertheless, population growth of urban areas is twice that of rural areas.

Table 3.1: Distribution of the De Facto Household Population, 2008-2014, DPRK

Year	2008		2014		Annual Exp. Growth Rate (%)
	Population	% Distribution	Population	% Distribution	
Urban	14,155,393	60.6	14,809,396	61.2	0.75
Rural	9,194,466	39.4	9,404,114	38.8	0.38
Total	23,349,859	100.0	24,213,510	100.0	0.61

Note: Population shown here includes all individuals living in private households and civil institutional living quarters.

Regarding the distribution of population by provinces, it is seen in Table 3.2 that South Phyongan Province that had the highest percent of population in 2008 continues to remain the highest with 17 percent of the national population residing there, followed by Pyongyang, South Hamgyong and North Phyongan (14%, 13% and 12% respectively). Although South Phyongan has the highest percent of population, a two decimal point decline in the population distribution has been confirmed in 2014. Yet, the four provinces together accounted for over 55 percent of the national population displaying contiguity in population concentration.

Concerning the growth rates of provinces, five of the 10 provinces have higher than national average growth rate. The highest growth rate is in Pyongyang (0.85%) followed by South Hwanghae (0.71%), Jagang (0.67%), Ryanggang (0.67%) and Kangwon (0.64%) while the lowest growth rate is in South Phyongan. In other words, South Phyongan has the highest proportion of population in the country but also witnessed the lowest growth rate of population.

Table 3.2: Distribution of the de Facto Household Population by Provinces, 2008-2014, DPRK

Sr. No.	Province	Population		% Population		Annual Exp. Growth Rate (%)
		2008	2014	2008	2014	
1	Ryanggang	719,269	748,622	3.1	3.1	0.67
2	North Hamgyong / Rason	2,327,362	2,402,264	10.0	9.9	0.53
3	South Hamgyong	3,066,013	3,176,869	13.1	13.1	0.59
4	Kangwon	1,477,582	1,535,623	6.3	6.3	0.64
5	Jagang	1,299,830	1,353,140	5.6	5.6	0.67
6	North Phyongan	2,728,662	2,829,013	11.7	11.7	0.60
7	South Phyongan / Nampho	4,051,696	4,161,412	17.4	17.2	0.45
8	North Hwanghae	2,113,672	2,171,707	9.1	9.0	0.45
9	South Hwanghae	2,310,485	2,410,621	9.9	10.0	0.71
10	Pyongyang	3,255,288	3,424,237	13.9	14.1	0.85
	Total	23,349,859	24,213,510	100.0	100.0	0.61

3.2. Population Composition

3.2.1. Age and Sex Composition of the Population

The age and sex distribution of the national population by place of residence and sex has been presented in the following Table 3.3 and Figure 3.1. The weighted and unweighted percentages are shown, but only weighted percentages have been used in the interpretation.   The difference between weighted and unweighted percentages is nominal and demonstrates that the sample data is self-weighted. It is to be noted that only the household population distribution is presented.

Deductions from the table reveal that 21 percent of the population is less than 15 years of age, 65 percent between 15 and 59 years and the remaining 14 percent are over 60 years.   The percentage of younger and working age population is higher in rural areas than in urban areas.

Table 3.3: Percent Distribution of the de Facto Household Population by Five-year Age Groups, according to Sex and Residence, SDHS-2014, DPRK

	Urban				Rural				Total			
	Male	Female	Weighted Total	Unweighted Total	Male	Female	Weighted Total	Unweighted Total	Male	Female	Weighted Total	Unweighted Total
0-4	7.3	6.2	6.7	6.7	7.9	7.0	7.4	7.4	7.5	6.5	7.0	7.0
5-9	7.1	6.0	6.5	6.6	8.0	7.1	7.5	7.5	7.4	6.4	6.9	7.0
10-14	7.8	6.3	7.0	7.2	8.4	7.6	8.0	8.1	8.0	6.8	7.4	7.6
15-19	7.4	7.2	7.3	7.0	7.1	7.8	7.5	7.5	7.3	7.4	7.3	7.2
20-24	5.9	7.5	6.7	6.5	5.5	7.5	6.6	6.6	5.7	7.5	6.7	6.5
25-29	6.9	6.9	6.9	6.9	7.9	7.2	7.5	7.5	7.3	7.0	7.1	7.1
30-34	7.5	7.0	7.2	7.1	7.9	6.9	7.4	7.3	7.6	6.9	7.3	7.2
35-39	7.2	6.6	6.9	6.9	8.0	6.8	7.4	7.3	7.5	6.7	7.1	7.0
40-44	10.1	9.0	9.5	9.5	8.9	8.4	8.6	8.7	9.7	8.7	9.2	9.2
45-49	8.7	8.1	8.4	8.4	8.4	7.8	8.1	8.2	8.6	8.0	8.3	8.3
50-54	6.7	6.7	6.7	6.9	6.1	5.7	5.9	5.9	6.5	6.3	6.4	6.5
55-59	5.8	5.5	5.7	5.7	4.9	4.9	4.9	5.0	5.5	5.3	5.4	5.4
60-64	3.4	3.7	3.6	3.6	3.9	3.6	3.8	3.6	3.6	3.7	3.7	3.6
65-69	3.8	4.5	4.2	4.1	3.4	4.1	3.7	3.7	3.7	4.3	4.0	3.9
70-74	2.5	3.9	3.2	3.3	2.4	3.7	3.1	3.0	2.4	3.8	3.1	3.1
75-79	1.3	3.1	2.2	2.3	1.1	2.3	1.7	1.7	1.2	2.8	2.0	2.1
80-84	0.4	1.4	0.9	1.0	0.2	1.3	0.8	0.7	0.3	1.4	0.9	0.9
85-89	0.1	0.4	0.3	0.3	0.1	0.3	0.2	0.2	0.1	0.4	0.2	0.2
90-94	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
95+	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Missing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	7,044,143	7,765,252	14,809,396	29,646	4,469,867	4,934,247	9,404,114	21,743	11,514,010	12,699,499	24,213,510	51,389

Figure 3.1: Age Distribution of Population, DPRK
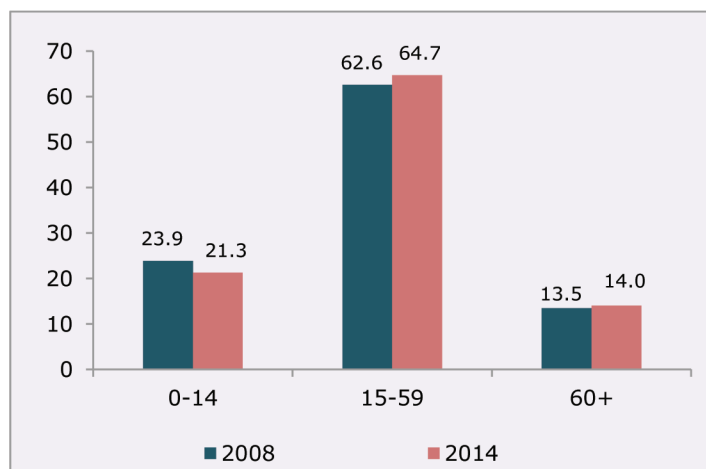
Analysis by gender indicates that there are more elderly women aged 60 years and above than men across urban and rural areas. Elderly women constitute 17 percent and 15 percent respectively of the female urban and rural population whereas it is 12 and 11 percent respectively in case of elderly men. Gender differential at older ages is pronounced and apparent and there is a clear-cut feminization of ageing taking place in the country irrespective of the place of their residence.

Analysis of trends between Census 2008 and SDHS-2014 (Figure 3.1) reveals that the proportion of national population in 0-14 ages has come down and that in 15-59 and 60+ age groups has gone up. The decline of more than two percentage points in the 0-14 age group implies that the fertility levels have declined and can be affirmed after examination of the 0-4 age-group single age returns and birth history data collected in the survey.

3.2.2. Sex Composition of the Population

The sex ratio defined as males to 100 females hovered around 90 in 2008 and 2014 as well. Although the sex ratio at national level remained unchanged in the past six years, the age-wise sex ratios have undergone changes (Figure 3.2). It is to be noted here that the sex-ratio presented

Figure 3.2: Sex Ratio of Population, DPRK
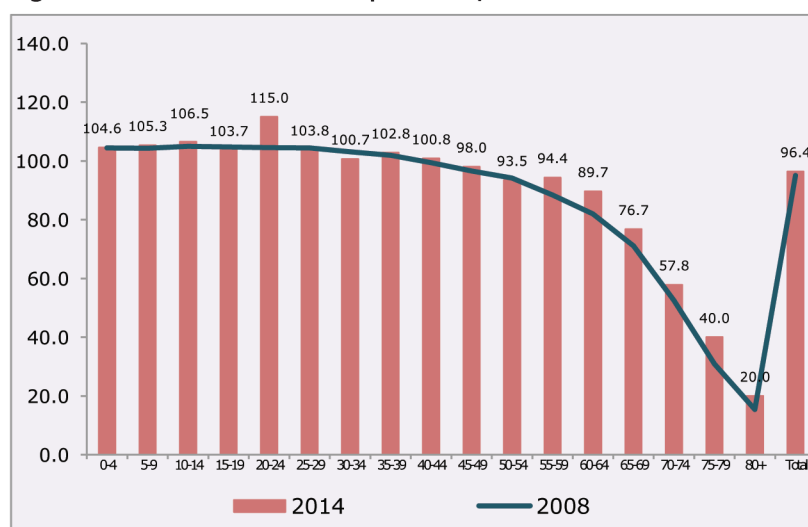
has been adjusted to match with the overall age-sex distribution of the population of 2008; given the fact the 2014 survey was restricted to household population.

The sex ratio at younger ages (0-14 years) remained more or less at the same level as 2008 while there were fluctuations at ages 20-24 and older ages. The sex ratios in these age-groups have become more masculine now. Nonetheless, one common inference that can be drawn is that there is feminization of ageing and as one advance in age and gets into old-older and old-oldest categories; then a skewed sex distribution is observed.

3.2.3. Population Density

The density of population that was 208 in 2008 marginally increased to 216 persons per km^2 in 2014. The highest density was seen in the capital city of Pyongyang, which increased from 1,345 to 1,402 while the least was in Ryanggang that registered an increase from 53 to 57 (Table 3.4). Barring Pyongyang, the population density across all the provinces ranged between 57 and 350. In terms of ranking based on density in 2014, there was no change in the order, which exactly remained the same as in 2008. In terms of percent increase in density of population, it was around four percent at national level with the minima-maximum ranging between 2.9 percent in two provinces of South Hamgyong and South Phyongan and 6.9 percent in Ryanggang Province.

Table 3.4: Population Density, 2008-2014, DPRK

Sr. No.	Provinces	Population Density		% difference
		2008	2014	
1	Ryanggang	53	57	6.9
2	North Hamgyong / Rason	145	150	3.7
3	South Hamgyong	173	178	2.9
4	Kangwon	142	148	4.3
5	Jagang	81	85	4.5
6	North Phyongan	243	253	3.9
7	South Phyongan / Nampho	340	350	2.9
8	North Hwanghae	240	250	4.0
9	South Hwanghae	311	325	4.5
10	Pyongyang	1,345	1,402	4.2
	National Average	**208**	**216**	**4.0**

3.2.4. Age-Sex Pyramid

Having analysed the sex composition of the population, age-sex pyramids for 2008 and 2014 have been constructed. It is worthwhile to mention here that given the long-term demographic disturbance caused by the Korean War, most of the classic measures to assess data quality (age-heaping index, successive age ratio, age-accuracy index, sex ratio score, age-sex accuracy index) are not appropriate. Nonetheless, to get a fair idea of the changes in age-sex distribution, a comparison was attempted.[1] It reveals that the base of the pyramid is shrinking at younger ages and expanding at older ages. The contracting base of the 2008 and 2014 population pyramids indicates that fertility has been declining over the years.

This situation has resulted in the reduction of the proportionate share of population below 15 years of age. A trough in the 2008 population pyramid for ages 55-59 years is quite evident. This can be attributed to the decreased birth rate during the Fatherland Liberation War in the early 1950s. Likewise, the 2008 and 2014 population pyramids reflect a second trough at the age groups of 30-34 and 35-39 respectively and the trough is basically due to the small size of the cohort of women born during the war who after entering the reproductive ages contributed to lesser number of births in comparison to preceding and successive cohorts.

After the war, the Party and the government promoted a pro-natalist policy to increase the population and to compensate for the loss of lives during the war. The policy continued until the early years of 1970s, resulting in the expanded shape of the population pyramids of both 2008 and 2014 for the cohorts born in that period. However, during the late seventies, the fertility rate began to decline due to programmes designed to improve the health of children and women and increase women's participation in economic activities. Although the fertility has dropped, the population has been increasing due to past momentum.

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[1] Spoorenberg, et.al., (2012), Demographic Changes in DPR Korea: 1993-2008, Population and Development Review 38(1) : 133–158 (MARCH 2012)

Figure 3.3: Age-Sex Pyramids, 2008 and 2014
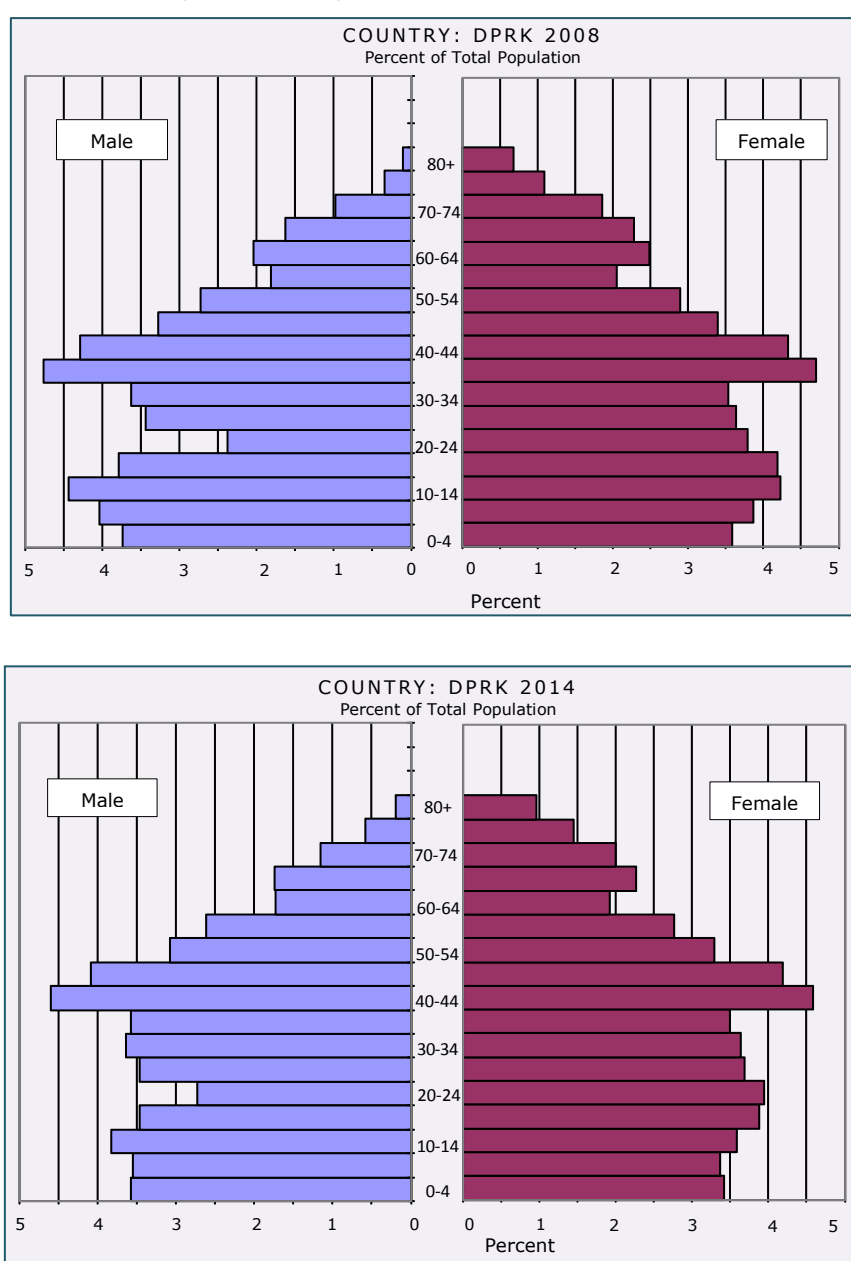
3.2.5. Dependency Ratio[2]

In Figure 3.4, the dependency ratio of the population has been displayed. The dependency ratio has used 0-14 years to calculate *young age dependency* and 60+ years for *old age dependency*.

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[2] The ratio of the economically dependent part of the population to the productive part; arbitrarily defined as the ratio of the elderly (ages 60 and older) plus the young (under age 15) to the population in the working ages (ages 15-59).

Figure 3.4: Dependency Ratio, DPRK
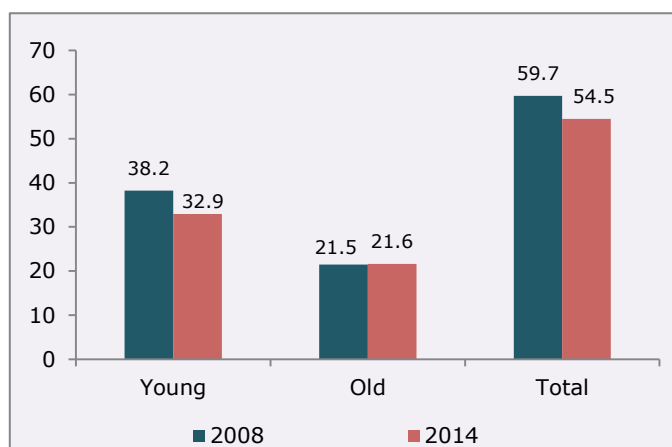
It can be observed that the overall dependency ratio has declined from around 60 percent to 55 percent. This is mainly because of a corresponding decline in young age dependency that came down rapidly from 38 percent in 2008 to 33 percent in 2014. The old age dependency remained at the same level, implying that the working age population base has marginally increased and the country is presently reaping the benefits of the demographic dividend. It is to be noted here that the dependency ratio is calculated for the population living in private households and civil institution living quarters.

Concerning the dependency ratios in urban and rural areas (Figure 3.5), the young age dependency is at least five percentage points higher in rural areas than in urban areas while it is the other way round for old age dependency. Although there is a nominal difference in old age dependency ratio between urban and rural areas, the point to be noted is that the population as a whole is ageing and old age dependency that has remained unchanged in the last six years will increase in the future. This will have implications on

Figure 3.5: Dependency Ratio by Place of Residence, DPRK 2014

the working age structure of the population and social and health policies of the country.
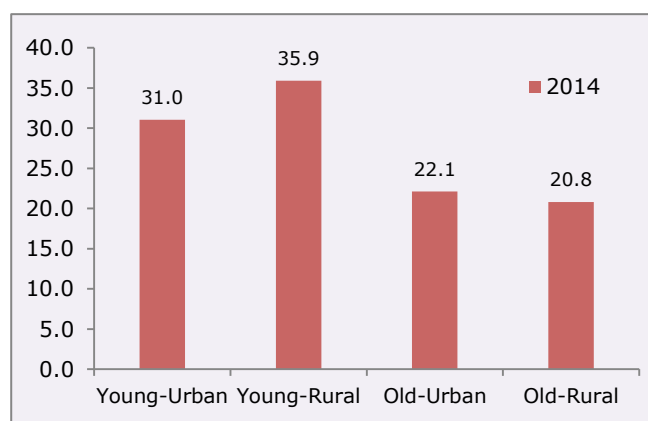
3.2.6. Quality of Age Data

The distribution of population by age, as recorded, is subject to various types of errors of omission and commission. The extent of errors in age distribution can be gauged by the single-year age returns based line graphs that have many spikes and dips, which cannot be expected in any human population. More serious among the observable errors is the digit preference that tends to cluster a large proportion of population in ages with digits ending in 5 or 0 and results in shifting from one age group to the other; usually the next age-group. If the age distribution is to be useful for any planning purposes and meaningful demographic analysis including population projections, they have to be adjusted for these errors. Given the historical influence of the DPRK on age-sex data and the limitations of drawing inferences on its basis, the quality test procedures have been restricted to Whipple's and Myer's Blended Index.

Whipple's Index (WI) is a measure of preference for ages ending with the digits 0 and 5, observed in a given population. The preference for these two digits is studied only between the ages 23 and 62, because outside this range, shifting and other problems often tend to confuse the pattern of heaping. The index is calculated simply by expressing the population with reported ages ending with the digits 0 and 5 as a percentage of the total population aged 23 to 62, and then multiplying it by 500. The range of the index is then from a minimum of 100 indicating practically no preference to these two digits to a maximum of 500 when all report their ages with digits ending with 0 or 5. The results from Whipple's index reveal that the overall value is 101 with 100 and 101 for males and females respectively. As per the UN classification, any value below 105 is considered to be *highly accurate* indicating no preference for 0 and 5 digits.

While Whipple's Index measures the extent of preference for numbers ending with digits 0 and 5, it does not measure the extent of preference for other digits. It is also observed that in any population that has been growing or declining steadily due to the effects of changes in fertility and mortality over time, the number ending with digit 0 is found to be higher than the next age ending with digit 1, which will be higher than the next ending with digit 2 and so on, that is, population at age 10 will be more than population at age 11, which is higher than age 12 and so on. In some populations, because of rapid declines in fertility it can be the other way round also in younger ages. Myers has developed a method for assessing the extent of preference or dislike for all digits, 0 to 9,

using a 'blended' method to avoid a possible bias in the index due to the fact that numbers ending in 0 would normally be larger than the following numbers ending in 1 to 9 because of the effect of mortality. The principle employed is as follows: first, to begin to count the number of people at ages ending with each of the 10 digits in the population beginning with age 10 and ending at 69 or 89, the maximum at which data are available; second, to do the same thing beginning with age 20 separately; third, to blend them (-weighted sum) in the ratio of x + 1 and 10 - x - 1 for the numbers ending with digit x; fourth, to compute the percentages of the blended sum to the total; fifth, to take the absolute deviation of this percentage from 10 (which is supposed to be the expected percentage of the blended number at any digit, in the absence of any digit preference); finally, to compute the average of the results over the 10 digits.

Regarding Myer's index, the aggregated values for males and females turned out to be 4.6 and 3.2 with the overall value being 3.8. Similarities in digit preference and aversion are seen between males and females. While there is strong preference of digits 5 and 6, strong aversion is seen for digits 0 and 2 respectively. Nonetheless, the quality of age data seems to be good.

3.3. Marital Status

Table 3.5 provides the distribution of population aged over 15 years by current marital status and age for men and women separately. Deductions from the marital status distribution indicate that 70 percent of the population aged over 15 years are currently married, 21 percent are never-married and the remaining are either widowed, divorced or separated. The percentages of never and currently married men are higher than for women while the percentage of widowed women is at least six times higher than men. Those in divorced or separated categories are negligible and seem to be uncommon in the cultural context of the country. Age-wise analysis clearly indicates that marriage in the DPRK takes place after man or woman has had attained more than 20 years of age. In the age-group of 20-24, less than two percent of men are married whereas it is 19 percent for women. In the subsequent age-group 25-29, nearly 80 percent of women are married while it is about two fifths for men. Most of the men are in married status in the 30-34 years age-group, signifying that men marry at older ages than women.

Table 3.5: Percent Distribution of Population Aged over 15 years by Current Marital Status and Age, SDHS-2014, DPRK

Age	Marital Status					Total	Number of respondents
	Never married	Married	Widowed	Separated	Divorced		
Men							
15-19	100.0	0.0	0.0	0.0	0.0	100.0	1,741
20-24	98.3	1.7*	0.0	0.0	0.0	100.0	1,318
25-29	61.7	38.2	0.0	0.0	0.1*	100.0	1,740
30-34	11.0	88.7	0.1*	0.0	0.1*	100.0	1,875
35-39	0.5	98.7	0.3*	0.0	0.5*	100.0	1,810
40-44	0.1*	99.2	0.4*	0.0	0.3*	100.0	2,361
45-49	0.1*	99.3	0.5*	0.0	0.1*	100.0	2,115
50-54	0.0	99.3	0.4*	0.0	0.3*	100.0	1,609
55-59	0.0	99.1	0.9*	0.0	0.0	100.0	1,334
60-64	0.0	97.2	2.8*	0.0	0.0	100.0	871
65-69	0.0	93.6	6.4	0.0	0.0	100.0	858
70-74	0.0	86.5	13.5	0.0	0.0	100.0	597
75-79	0.0	77.2	22.8	0.0	0.0	100.0	305
80+	0.0	55.6	44.4	0.0	0.0	100.0	106
Total	**23.8**	**74.4**	**1.7**	**0.0**	**0.1***	**100.0**	**18,640**
Women							
15-19	100.0	0.0	0.0	0.0	0.0	100.0	1,960
20-24	80.9	19.0	0.0	0.0	0.1*	100.0	2,043
25-29	20.0	78.8	0.7*	0.0	0.5*	100.0	1,913
30-34	2.8	94.4	1.9	0.0	0.9	100.0	1,823
35-39	0.9*	96.1	1.7	0.0	1.4	100.0	1,805
40-44	0.2*	95.1	3.2	0.0	1.5	100.0	2,360
45-49	0.1*	93.2	6.3	0.1*	0.4*	100.0	2,170
50-54	0.0	86.0	13.7	0.0	0.3*	100.0	1,709
55-59	0.0	77.4	22.3	0.0	0.3*	100.0	1,428
60-64	0.0	64.7	35.3	0.0	0.0	100.0	996
65-69	0.0	52.8	47.2	0.0	0.1*	100.0	1,154
70-74	0.2*	36.0	63.6	0.0	0.2*	100.0	1,018
75-79	0.0	21.1	78.9	0.0	0.0	100.0	749
80+	0.3*	5.3	94.4	0.0	0.0	100.0	497
Total	**18.9**	**64.7**	**15.9**	**0.0**	**0.5**	**100.0**	**21,625**
Both sexes	**21.2**	**69.2**	**9.3**	**0.0**	**0.3**	**100.0**	**40,265**

* Cell frequency <25

As regards widowhood, it is evident that the life expectancy of women is longer than that of men. The percentage of women widowed starts increasing from 22 percent at ages 55-59 years and reaches 64 percent by the time they are 70-74 years and 94 percent after they are 80+ years old. On the contrary, men remain in marital union until they are 75 years of age subsequent to which there is a spurt in their widowhood status but reaches a maximum of 44 percent after they have turned 80 years old. This finding reinforces our earlier interpretation of age-sex data wherein feminization of population ageing has been highlighted. This aspect has to be reviewed and appropriate policies and programmes will have to be initiated for the welfare and well-being of elderly women.

Table 3.6 provides the distribution of population 15-49 years by selected background characteristics. This is a base table and provides the distribution of the reproductive age population in terms of their age, place of residence and marital status.

The table points out that about 38 percent of men and 42 percent of women are aged between 15 and 29 years. The majority of them, as observed in the earlier analysis, reside in urban areas and their distribution across provinces is in line with the population distribution with a large proportion of them concentrated in Pyongyang and South Phyongan, South Hamgyong and North Phyongan provinces respectively.

In regard to their marital status, two thirds of men and women are currently married and the percentage of the never married is slightly higher in the case of men than of women. As observed earlier, the proportion of women widowed, divorced or separated is negligible but definitely higher than of men. Another statistic not depicted in the table but analysed from the survey data indicates that more than three fourths of men and women had completed secondary senior level of education. It is important to mention that compulsory education promoted by the government has worked well and boys or girls dropping out before the cut-off age of 17 years are rare and there are hardly any gender differentials until this point, which becomes evident in tertiary and higher level education.

This aspect will be dealt with in detail in the education section. Concerning the mean age at first marriage of ever-married women aged 15-49 years, it is seen that the national average is 24.9 years (Table 3.7). Barring the age-groups

20-24 and 25-29 years where the mean age at marriage of ever-married women are 22.4 and 24.3 years respectively, all the women in other age-groups had their mean ages of around 25 years. The cohort analysis thus implies that the older cohort of women married later than the younger cohorts. At exact age of 25 years, nearly a third of women aged 15-49 got married while it is less than three percent at exact age of 22 years.   On the whole, it can be deduced that mean age at marriage of women is high but the younger cohorts have started marrying earlier than the older cohorts. To reaffirm our findings on the mean age at marriage of women, the Singulate Mean Age at Marriage (SMAM) is calculated using Hajnal's method. It reveals that SMAM for women in the DPRK is 25.24 years.   Thus, the two analyses of mean age at marriage and SMAM clearly depict that women in the DPRK are marrying at around 25 years of age. The mean age at first marriage of men and women are analysed by background characteristics and presented in Table 3.8. Initially, it was intended to analyse 20-49 years for men and women. However, with the mean ages being around 25 years for both categories and with over 80 percent men and women unmarried in 20-24 years, it was later decided to restrict the analysis to the age-groups 25-54 years for men and 25-49 years for women.

Table 3.6: Percent Distribution of the 15-49 Population by Five-year Age Groups, according to Sex and Selected Background Characteristics, SDHS-2014, DPRK

	Men			Women		
	Weighted percent	Weighted number	Unweighted number	Weighted percent	Weighted number	Unweighted number
Age						
15-19	13.6	839,159	1,741	14.1	939,504	1,960
20-24	10.7	659,548	1,318	14.4	954,840	2,043
25-29	13.5	837,588	1,740	13.4	893,036	1,913
30-34	14.2	880,599	1,875	13.3	881,954	1,823
35-39	14.0	866,244	1,810	12.8	848,325	1,805
40-44	18.0	1,112,574	2,361	16.7	1,109,106	2,360
45-49	16.0	989,713	2,115	15.3	1,013,802	2,170
Residence						
Urban	61.2	3,787,854	7,432	61.0	4,052,155	8,057
Rural	38.8	2,397,570	5,528	39.0	2,588,413	6,017
Total	100.0	6,185,424	12,960	100.0	6,640,568	14,074

Contd.

	Men			Women		
	Weighted percent	Weighted number	Unweighted number	Weighted percent	Weighted number	Unweighted number
Province						
Ryanggang	2.6	160,896	1,040	2.9	191,697	1,239
North Hamgyong / Rason	9.1	564,873	1,130	10.5	698,472	1,398
South Hamgyong	12.7	788,409	1,527	13.6	902,192	1,733
Kangwon	6.5	403,366	1,413	6.7	442,243	1,546
Jagang	5.5	340,206	1,227	5.5	364,274	1,313
North Phyongan	11.6	720,404	1,231	11.8	781,278	1,335
South Phyongan / Nampho	17.8	1,101,374	1,619	16.8	1,114,023	1,662
North Hwanghae	9.2	567,021	1,215	8.8	583,390	1,251
South Hwanghae	9.9	611,236	1,238	9.4	624,865	1,266
Pyongyang	15.0	927,638	1,320	14.1	938,135	1,331
Marital Status						
Never married	34.1	2,107,564	4,289	29.0	1,925,810	4,035
Married	65.5	4,053,932	8,613	68.3	4,533,177	9,630
Widowed	0.2	13,491	36	2.1	136,175	312
Separated	0.0	-	-	0.0	591	1
Divorced	0.2	10,436	22	0.7	44,816	96
Total (15-49)	100.0	6,185,424	12,960	100.0	6,640,568	14,074

Table 3.7: Percentage of Ever-Married Women 15-49 years who were First Married by Specific Exact Ages, and Mean Age at First Marriage, according to current age, SDHS-2014, DPRK

Exact Age at First Marriage						
Age	20	22	25	Percent never married	Mean age at marriage	Number of respondents
15-19	0.0	0.0	0.0	100.0	-	1,960
20-24	0.1*	4.0	19.0	80.9	22.4	2,043
25-29	0.0	3.3	44.9	20.0	24.3	1,913
30-34	0.0	2.3	33.4	2.8	25.4	1,823
35-39	0.0	3.0	43.2	0.9	25.2	1,805
40-44	0.0	2.9	46.5	0.2	24.9	2,360
45-49	0.0	2.6	41.5	0.1	25.0	2,170
20-49	0.0	3.0	38.2	17.3	24.8	12,114
25-49	0.0	2.8	42.1	4.5	25.0	10,071
Total	0.0	2.6	32.8	29.0	24.9	14,074

Table 3.8: Mean age at first marriage among women 25-49 years, and mean age at first marriage among men age 25-54 years, according to background characteristics, SDHS-2014, DPRK

Background Characteristics	Men (25-54)	Women (25-49)
Residence		
Urban	28.1	25.1
Rural	27.8	24.7
Province		
Ryanggang	28.0	24.9
North Hamgyong / Rason	28.1	25.0
South Hamgyong	28.0	25.3
Kangwon	28.3	25.1
Jagang	27.6	24.9
North Phyongan	27.5	24.7
South Phyongan / Nampho	28.2	24.9
North Hwanghae	28.1	24.7
South Hwanghae	27.9	24.6
Pyongyang	28.3	25.4
Marital Status		
Married	28.0	25.0
Widowed	*	24.8
Separated	*	*
Divorced	*	25.4
Total	28.0 (9,469)	25.0 (9,621)

Cell frequency < 25 cases

Interpretations of results indicate urban men and women marry at higher ages than their rural counterparts although the differences are minimal between the two areas. The mean age at marriage of men ranged from a high of 28.3 years in Pyongyang to a low of 27.5 years in North Phyongan while for women, the highest is 25.4 years in Pyongyang and the lowest is in South Hwanghae. Separated and divorced women had higher mean age at marriage than married or widowed women. Analysis by education too was undertaken but did not show a positive association, which is normally the case in most countries. Thus on the whole, there is a three years age difference in the mean age at marriage of men and women and is more or less uniform across the country.

3.4. Education and Literacy

Information on the educational and literacy status of the population over five years old was for the first time included in Census 2008 and in order to enable comparisons and analyse trends, the SDHS too exactly posed similar questions and used the census definition of a literate, which is a person able to read and write with understanding. Further, literacy rate by rural and urban areas and provinces, educational attainment and school enrolment of population aged 5-24 years are presented. It is to be mentioned here that the DPRK has a 12-year free and compulsory education system. The system begins with pre-school of one year, primary school of five years and ends with secondary school of six years.

3.4.1. Literacy Rate

The literacy rate of the population aged over 10 years in the DPRK is universal and there are hardly any regional or gender variations. Even if there are variations, it is only nominal and is few decimal points more or less and hence difficult to infer whether urban is better than rural or male is better than female (Table 3.9). Nonetheless, one point that emerges out is that the government has been implementing the education policy on compulsory education very well and the several decades of efforts are clearly visible, as the entire population over 10 years in the country is literate. Province-wise analysis depicts a similar picture with five provinces having cent percent literacy rate and the remaining five having few decimal points less. On the whole, for population 10+ years in the DPRK has attained cent percent literacy (Table 3.10).

Table 3.9: Literate Population and Literacy Rate among 10+ Population, SDHS-2014, DPRK

Particulars	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Population 10+	6,031,358	6,814,655	12,846,013	3,759,425	4,242,825	8,002,250	9,790,783	11,057,480	20,848,263
Literate Population 10+	6,031,079	6,813,899	12,844,978	3,758,326	4,242,259	8,000,585	9,789,406	11,056,158	20,845,564
Literates (%)	99.995	99.989	99.992	99.971	99.987	99.979	99.986	99.988	99.987

Additionally, another statistic not presented shows that there is hardly any differential when trends between 2008 and 2014 are compared at national and provincial level and by place of residence and sex. This finding goes on to show that the DPRK has done remarkably well in ensuring cent percent literacy rate among the eligible population in the country through proper implementation of education reforms.

Table 3.10: Province-wise Literacy Rate by Place of Residence and Sex, SDHS-2014, DPRK

Sr. No.	Province	Urban		Rural		Overall Total
		Male	Female	Male	Female	
1	Ryanggang	100.00	99.93	100.00	100.00	99.98
2	North Hamgyong / Rason	100.00	100.00	100.00	100.00	100.00
3	South Hamgyong	100.00	99.93	99.88	100.00	99.96
4	Kangwon	100.00	100.00	100.00	100.00	100.00
5	Jagang	99.92	100.00	100.00	99.88	99.95
6	North Pyongan	100.00	100.00	100.00	100.00	100.00
7	South Pyongan / Nampho	100.00	100.00	100.00	99.95	99.99
8	North Hwanghae	100.00	100.00	100.00	100.00	100.00
9	South Hwanghae	100.00	100.00	99.92	100.00	99.98
10	Pyongyang	100.00	100.00	100.00	100.00	100.00
	Total	**100.00**	**99.99**	**99.97**	**99.99**	**99.99**

3.4.2. School Attendance

The survey posed questions on current school attendance by focusing on the school-age population of 5-24 years. Information has been gathered through three questions of whether attending school or not, if yes, the level of schooling and the highest level of education completed. In Table 3.11, whether attending school has been analysed and in the subsequent sub-section, the highest level of education has been presented to make it possible to understand the extent to which the future generation of children are geared up to capitalize on the demographic dividend and at the same time to show how effective the education reforms of compulsory education has been.

Deductions from the analysis indicate that school attendance at younger ages of 5-14 years is almost universal in both urban and rural areas and between males and females respectively. However, as children grow to be beyond 14 years of age, school attendance drops down to 62 percent and 16 percent for age groups

of 15-19 and 20-24 years. The drop in it at these ages are substantial in rural areas in comparison to their urban counterparts and gender differentials that are non-existent before 14 years become visible and profound in rural areas.

Table 3.11: Percent Distribution of School Attendance of Persons 5 - 24 years according to Background Characteristics, SDHS-2014, DPRK

	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Age									
5-9	96.6	96.9	96.8	95.8	97.5	96.6	96.3	97.2	96.7
10-14	99.6	100.0	99.8	99.9	99.9	99.9	99.7	99.9	99.8
15-19	75.1	61.1	67.8	60.7	49.4	54.6	69.6	56.3	62.6
20-24	31.5	13.9	21.2	14.4	1.9	6.9	25.1	9.2	15.7
Province									
Ryanggang	92.6	75.1	82.7	88.4	69.6	77.7	91.0	73.0	80.8
N. Hamgyong/ Rason	90.2	67.5	77.7	85.4	62.1	72.6	88.9	66.1	76.3
S. Hamgyong	79.6	62.5	70.1	76.1	58.2	66.5	78.1	60.7	68.6
Kangwon	73.7	59.5	66.5	72.2	54.6	62.4	72.9	56.7	64.2
Jagang	73.6	61.8	67.2	70.0	64.3	67.0	72.1	62.8	67.1
N. Phyongan	78.0	64.6	71.1	75.3	65.0	69.5	76.8	64.8	70.3
S. Phyongan/ Nampho	71.8	62.9	67.7	70.2	63.7	66.8	71.3	63.2	67.4
N. Hwanghae	75.9	61.3	69.2	70.5	59.3	64.8	73.1	60.1	66.8
S. Hwanghae	74.2	64.8	69.4	70.1	63.0	66.5	71.5	63.6	67.5
Pyongyang	79.7	69.1	74.2	65.8	62.0	63.8	77.7	68.1	72.7
Total	**78.2**	**65.0**	**71.4**	**73.0**	**61.6**	**66.9**	**76.1**	**63.6**	**69.6**

Perhaps, with completion of compulsory education and completing 16 years of age, majority of school-aged children move out of the education system while only a small proportion of urbanites, especially males, pursue higher level of education. As far as provinces are concerned, six out of the ten provinces have lower school attendance of children than the national average barring Ryanggang, North Hamgyong and North Phyongan provinces and Pyongyang Municipality and gender differentials are profound with more males than females attending school across the country.

Table 3.12: Province-wise Educational Attainment (%) of Population 5+ Years by Sex, SDHS-2014, DPRK

Province/ Education	Ryanggang	N.Hamgyong/ Rason	S.Hamgyong	Kangwon	Jagang	N.Phyongan	S.Phyongan/ Nampho	N.Hwanghae	S.Hwanghae	Pyongyang	Total
Male											
None	3.8	3.8	3.2	2.9	3.0	3.8	3.3	3.8	2.6	2.8	3.3
Pre-school	8.5	8.2	5.8	6.8	6.0	5.3	6.0	7.1	7.6	5.1	6.5
Primary	6.9	6.7	5.9	5.5	5.4	6.8	4.9	4.6	5.1	5.0	5.7
Secondary junior	5.8	5.8	5.9	4.8	5.9	4.4	5.0	6.0	6.5	6.1	5.6
Secondary senior	56.7	57.9	60.6	61.6	65.7	61.8	65.4	62.4	60.9	52.0	60.2
Vocational (<3yrs)	2.2	1.8	2.7	2.9	1.2	2.8	2.9	2.2	3.3	2.8	2.6
Post - Secondary (3yrs)	6.2	5.4	5.4	6.8	3.9	4.9	4.4	4.8	6.6	4.7	5.2
Tertiary+	10.0	10.3	10.4	8.7	8.9	10.1	8.1	9.1	7.5	21.6	10.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Female											
None	3.6	2.7	2.6	3.0	3.2	3.2	3.1	2.2	2.5	2.8	2.8
Pre-school	6.5	5.6	5.4	5.8	5.3	6.1	5.2	5.6	6.1	5.2	5.6
Primary	6.6	5.3	5.5	5.0	6.0	5.4	5.1	4.7	6.0	6.1	5.5
Secondary junior	5.5	5.0	4.4	4.1	4.6	5.2	4.2	5.1	5.8	4.3	4.7
Secondary senior	60.4	66.3	67.6	67.5	72.0	66.6	68.8	68.5	68.1	57.5	66.3
Vocational (<3yrs)	3.6	1.5	2.9	3.7	1.9	2.3	2.8	2.6	3.0	4.1	2.8
Post- Secondary (3yrs)	6.0	5.6	4.6	5.2	2.4	4.7	4.6	4.4	3.1	8.0	5.0
Tertiary+	7.8	8.0	6.9	5.7	4.6	6.5	6.1	7.0	5.6	12.0	7.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 3.13: Educational Attainment of the Population 5+ Years, SDHS-2014, DPRK

	None	Pre-School	Pri.	Sec. Junior	Sec. Senior	Vocational (<3yrs)	Post. Sec. (3 yrs)	Tertiary & above	Total	Number
Male										
5-9	40.0	60.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	1,840
10-14	0.1*	17.3	60.3	22.3	0.0	0.0	0.0	0.0	100.0	2,003
15-19	0.1*	0.0	0.1*	45.5	53.7	0.5	0.0	0.1*	100.0	1,741
20-24	0.0	0.1*	0.1*	0.3*	88.6	3.8	1.4*	5.7	100.0	1,318
25-29	0.0	0.1*	0.0	0.0	83.8	2.4	4.2	9.5	100.0	1,740
30-59	0.0	0.0	0.0	0.0	72.7	3.2	8.2	15.8	100.0	11,104
60+	0.1*	0.1*	2.4	0.4*	69.6	4.6	5.9	16.8	100.0	2,737
Total	**3.3**	**6.4**	**5.6**	**5.6**	**60.4**	**2.6**	**5.2**	**10.9**	**100.0**	**22,483**
Female										
5-9	39.3	60.7	0.0	0.0	0.0	0.0	0.0	0.0	100.0	1,771
10-14	0.0	18.5	60.2	21.2	0.0	0.0	0.0	0.0	100.0	1,914
15-19	0.1*	0.0	0.0	39.8	57.3	1.9	0.6*	0.2*	100.0	1,960
20-24	0.0	0.1*	0.0	0.0	82.6	5.2	6.8	5.3	100.0	2,043
25-29	0.0	0.1*	0.0	0.0	79.9	4.4	5.7	9.9	100.0	1,913
30-59	0.0	0.0	0.0	0.0	77.2	3.1	7.7	11.9	100.0	11,295
60+	0.8	0.3*	6.2	0.2*	82.4	3.1	2.9	4.1	100.0	4,414
Total	**2.9**	**5.7**	**5.6**	**4.7**	**66.0**	**2.8**	**5.0**	**7.2**	**100.0**	**25,310**
Total										
5-9	39.7	60.3	0.0	0.0	0.0	0.0	0.0	0.0	100.0	3,611
10-14	0.1*	17.9	60.3	21.8	0.0	0.0	0.0	0.0	100.0	3,917
15-19	0.1*	0.0	0.1*	42.4	55.6	1.3	0.3*	0.2*	100.0	3,701
20-24	0.0	0.1*	0.1*	0.1*	85.1	4.6	4.6	5.4	100.0	3,361
25-29	0.0	0.1*	0.0	0.0	81.8	3.4	5.0	9.7	100.0	3,653
30-59	0.0	0.0	0.0	0.0	75.0	3.2	7.9	13.9	100.0	22,399
60+	0.5	0.2*	4.8	0.3*	77.5	3.7	4.1	9.0	100.0	7,151
Total	**3.1**	**6.1**	**5.6**	**5.1**	**63.3**	**2.7**	**5.1**	**9.0**	**100.0**	**47,793**

* Cell frequency < 25 cases

3.4.3. Educational Attainment

While literacy among the population of over 10 years in the country is universal irrespective of place of residence and gender, analysis of the educational attainment of population will provide better insights of the quality of educated population and, more specifically, of the youth population, whose educational attainment and skill-sets would determine how the demographic window of opportunity could be capitalized. Such an analysis has been attempted and discussed in this sub-section.

It can be visualized in Table 3.12 that a majority (60% of male and 66% of female) of population over five years of age completed secondary senior level of education and another 19 percent and 15 percent of males and females respectively had over post-secondary education. Differentials in educational attainment within and across provinces and between males and females are apparent. Pyongyang has the highest percentage of population with tertiary and advanced education and is true for both males and females. More than one fifth of males and one tenth of females had tertiary and over education while the least is seen in Jagang Province. Furthermore, gender differentials become evident with the advance of education, implying that the majority of females discontinue after having attained post-secondary (3 years) education.

Given our understanding of the profile of educational attainment by provinces, age-wise analysis has been carried out and presented in Table 3.13. Obviously, a higher percentage of children in 5-6 ages are yet to register in school. However, with age, the educational attainment also increases, depicting a clear trend among children of school going ages. At higher ages, beyond 30 years, more than three fourths had attained secondary-senior level of education and 10 percent tertiary and higher education. While male educational attainment at tertiary and higher education level for 30-59 and 60+ years conforms with the overall pattern, it is not so for females 60 years and above. There is a huge gender gap and is understandable at older ages.

Figure 3.6: Tertiary and Advanced Educational Attainment of Population 5+ years, DPRK 2014
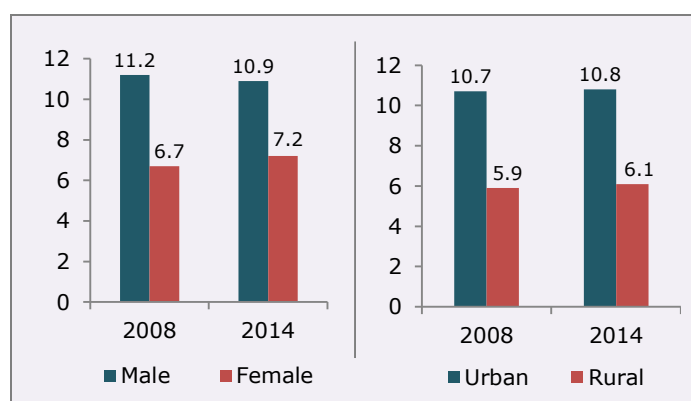
Nonetheless, the findings clearly reaffirm the fact that there is hardly any gender differential until secondary senior level of education is attained but the differential starts widening thereafter. As far as trends are concerned (Figure 3.6), there seems to be a marginal increase in percentage of females attaining tertiary and higher education whereas the opposite has been observed in case of males. Interestingly, between urban and rural areas, the differentials are negligible.

3.5. Economic Participation

Information on the economic participation of the population over 16 years of age was collected in SDHS 2014. Questions related to--did you work in the one week preceding the survey, what kind of enterprise have you been working for, what is your occupation and how many hours do you work, and on an average did you work per day during the one week preceding the survey-- were asked. For those who didn't work in the week preceding the survey, reasons for not working were gathered. The survey results provide the most recent activity status, as a one-week cut-off was used as against the six-month cut-off used in Census 2008. Hence the two sources are not directly comparable.

Here, the International Standard Industrial Classification of All Economic Activities (ISIC Revision 4) and the International Standard Classification of Occupations (ISCO-08) coding's were adopted, but as they are yet to be codified, the present section has limited the analyses to the Census 2008 classification.

3.5.1. Activity Status

Employment is guaranteed to every citizen in the country. On completion of secondary school at age 16, most young people begin to participate in various economic activities while a few continue with their higher education. Theoretically, there is no unemployment in the country, but in practice, not everyone is working because there are either incapacitated or retired. It is to be noted that the retirement age for men is 60 years while it is 55 years for women[3].

The following Table 3.14 indicates that seven out of ten persons over 16 years of age are actively engaged in work and about two out of ten persons are retirees. Among the remaining, a meager six percent are studying, five percent are doing housework and the remaining are either incapacitated or doing nothing. The proportion of rural persons working is marginally more than their urban counterparts. Although the reference period of determining work status between the census and the survey is different (six months in the census as against one week in the survey), the inference one can draw is that there is hardly any major change in the distribution.

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[3] The Population of the Democratic People's Republic of Korea, *An Analysis of Data from the Census 2008*, Central Bureau of Statistics, 2008

Table 3.14: Percent distribution of Population 16 Years or older by Activity Status and Place of Residence, SDHS-2014, DPRK

Activity Status	2008[+]			2014[++]		
	Urban	Rural	Total	Urban	Rural	Total
Working	69.6	71.0	70.2	68.2	71.2	69.3
Normally Working, but sick/holiday	-	-	-	0.5	0.5	0.5
Studying	6.3	4.0	5.4	6.4	4.2	5.6
Incapacitated	0.8	1.0	0.9	0.7	0.9	0.8
Retired	17.6	19.0	18.1	18.7	18.5	18.6
Doing Housework	5.6	4.9	5.3	5.4	4.6	5.1
Doing nothing/Others	0.1	0.1	0.1	0.1*	0.1*	0.1
Total	100.0 (10,686,523)	100.0 (6,680,246)	100.0 (17,366,769)	100.0 (23,079)	100.0 (16,378)	100.0 (39,457)

Note: * cell frequency < 25 cases: [+]calculations are based on a six-month cut-off; [++] calculations based on one-week cut-off.

Regarding the work participation across the provinces, it can be seen in Table 3.15 that six out of the ten provinces have more working persons than the national average, although the variation between the highest and least is negligible. Provinces of North Phyongan, Ryanggang, North Hamgyong and Kangwon have similar rates of over 70 percent; followed by South Phyongan, Jagang and South Hwanghae in that order. The least work participation is observed in Pyongyang. The urban-rural differential is obvious with more rural people engaged in work and is true across the country.

Table 3.15: Percent distribution of Working Population by Place of Residence and Sex, SDHS-2014, DPRK

Provinces	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Ryanggang	79.7	61.9	69.7	83.8	63.5	72.3	81.1	62.4	70.6
N. Hamgyong/ Rason	79.2	62.5	69.8	80.2	66.5	72.7	79.5	63.5	70.6
S. Hamgyong	77.0	60.4	67.9	77.2	66.1	71.1	77.1	62.7	69.2
Kangwon	76.7	56.1	65.7	80.9	70.5	75.3	78.8	63.5	70.6
Jagang	78.1	62.5	69.7	81.0	59.3	69.4	79.1	61.4	69.6
N. Phyongan	77.3	63.5	69.9	79.3	64.4	71.4	78.2	63.9	70.6
S. Phyongan/ Nampho	80.1	60.4	69.9	79.2	60.3	69.2	79.8	60.4	69.6
N. Hwanghae	76.8	58.0	66.9	79.5	60.4	69.4	78.2	59.3	68.2
S. Hwanghae	74.9	58.7	66.4	80.4	62.8	71.2	78.4	61.3	69.4
Pyongyang	74.4	58.6	66.0	82.5	63.6	72.7	75.5	59.2	66.9
Total	77.3	60.3	68.2	79.8	63.6	71.2	78.3	61.6	69.3

In addition to the urban-rural differential, the gender differential is common across the provinces. More males than females are actively engaged in work and this finding holds good for urban and rural areas. While four fifths of males are engaged in work, it is three fifths in case of females. Likewise differentials are seen in urban and rural areas.

Figure 3.7 exhibits the extent of gender difference in work participation across the country. The difference at the national level is 16.7 percent and ranges from a maximum of 19.4 percent in South Phyongan to a minimum of 14.3 percent in North Phyongan. There are at least five provinces that have a greater gender than the national average. Thus, on the whole, it can be deduced

Figure 3.7: Province-wise Sex Differentials in Work Participation, DPRK 2014

that gender disparity in work participation exists and is reasonably high. To get a more comprehensive picture, work participation by age and type of activities that males and females are engaged in is discussed in the following sections.
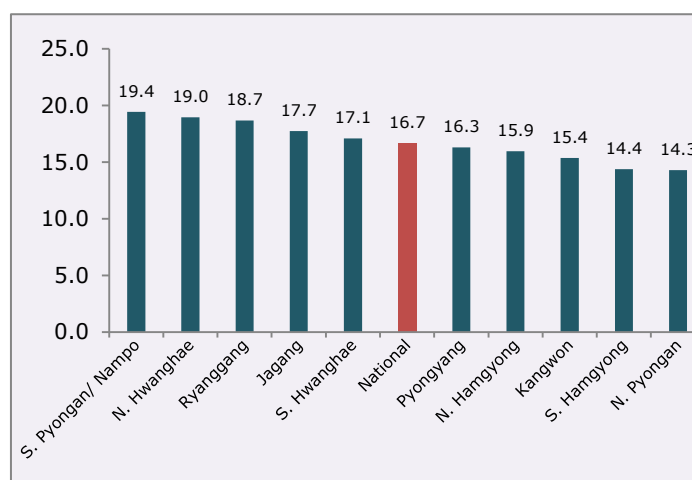
Observations from Table 3.16 and Figure 3.8 indicate that the work participation increases from around half for 16-19 ages to a maximum of 92 percent for 40-49 ages. Thereafter work participation declines to around 60 percent for 55-59 ages and is less than five percent for 65+ age category. Thus, the work participation rate peaks between ages 40 and 49 years. While this pattern exists at the national level, the pattern of change in work participation is different for males and females. In case of males, work participation starts from 42 percent for 16-19 ages and reaches 95 percent at 30-34 years. From there on, it peaks at 40-44 years and remains more or less at the same level until 55-59 years subsequent to which there is a huge drop.

In contrast, work participation for females starts early and is higher than males until 29 years. Participation of females peaks early between 25 and 29 years after which it hovers around 85 percent until 49 years and then declines drastically. As age of retirement is 60 for men and 55 for females, one can

clearly deduce the pattern emerging out from the analysis. If the finding that females work participation starts earlier than males is juxtaposed with educational enrolment beyond the compulsory education, a huge dropout of females is observed. So the females who drop out after receiving compulsory education invariably get into the work-force and the gender differential seen in education is once again reflected in the age-specific work participation rate.

Table 3.16: Percent of Working Males and Females 16 Years or older by Selected Background Characteristics, SDHS-2014, DPRK

Background Characteristics	Males	Females	Total
Age			
16-19	42.0	56.4	49.7
20-24	77.7	91.0	85.6
25-29	86.3	89.2	87.8
30-34	95.3	82.1	88.7
35-39	96.8	81.2	89.1
40-44	98.1	85.3	91.7
45-49	97.5	85.1	91.2
50-54	97.7	82.3	89.8
55-59	96.7	23.5	59.1
60-64	32.2	4.0	17.3
65+	8.6	0.8	3.6
Marital Status			
Never married	68.3	76.3	72.1
Married	82.4	68.5	75.4
Widowed	25.0	16.9	17.6
Separated	-	-	-
Divorced	97.8*	73.9*	78.7*
Education			
Secondary senior	79.2	61.2	69.3
Vocational (<3yrs)	81.2	66.4	73.1
Post-Secondary (3yrs)	86.5	74.1	80.1
Tertiary	84.7	79.7	82.6
Advanced tertiary	100.0	84.8	94.1
Total	**78.3**	**61.6**	**69.3**

Cell frequency <25 cases

Regarding work participation by marital status, more married males and unmarried females participated in economic activities while work participation of widowed was less than a fifth with more widowed males than females participating in the workforce. In case of education, a perfect linear relationship

Figure 3.8: Age-Specific Work Participation Rates, DPRK 2014
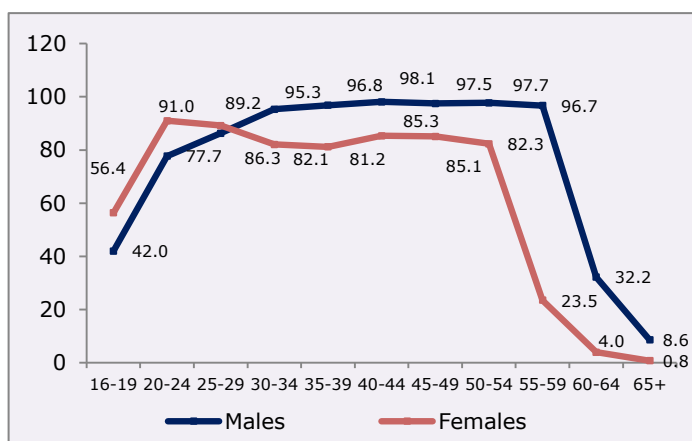
is seen for females. As education attainment of women increases, the work participation too increases while in case of males there is a slight aberration between post-secondary and tertiary education and work participation. Nonetheless, with cent percent participation of advanced tertiary, a direct correlation between higher level education and work participation can be derived. Nonetheless, inferring from the foregoing analysis, it can be said that work participation peaks during middle age and those with higher level of education are more engaged in work than others.

3.5.2. Work Participation by Sectors

As stated earlier, open-ended responses on occupational activities have been solicited in the survey. In line with the information classified in Census 2008, 19 types of occupations were classified and due to small number of cases in several occupational categories, they were later categorized into primary (agriculture and allied activities), secondary (manufacturing) and tertiary (service) sectors. Results from the analysis are presented in Table 3.17.

Even though majority of the DPRK people reside in urban areas, occupation-wise, the population looks agrarian because almost eight out of ten persons in rural areas are engaged in the primary sector.

Table 3.17: Percent distribution of Working Population 16 Years or Older by Sectors of Engagement, SDHS-2014, DPRK

Economic Sectors	Males			Females			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Primary	20.2	76.0	41.9	14.1	84.6	41.7	17.3	80.1	41.8
Secondary	46.4	9.0	31.9	32.1	4.8	21.4	39.6	7.0	26.9
Tertiary	33.4	15.0	26.3	53.8	10.6	36.9	43.1	12.9	31.3
Total	100.0 (8,239)	100.0 (6,096)	100.0 (14,335)	100.0 (7,517)	100.0 (5,614)	100.0 (13,131)	100.0 (15,756)	100.0 (11,710)	100.0 (27,466)

Overall, 42 percent of the working persons are engaged in primary activities, 30 percent in secondary sector and the remaining 28 percent in the tertiary sector. While the majority of rural persons are engaged in primary sector, their urban counterparts are more or less equally distributed between secondary and tertiary sectors (about 40 percent each). In case of males and females, after primary sector, it is noticeable that more females are engaged in tertiary sector while more males are in the secondary sector. When dissected by urban and rural, more than half of urban females work in the tertiary sector.

3.5.3. Reasons for not working

The SDHS posed questions to those who had not worked in the one week preceding the survey to understand the reasons for not working and analysed them separately for males and females. It is observed that in case of males, nearly three fifths of males retired; over one third were studying; about five percent were incapacitated and the remaining were either sick or on holiday or doing nothing (Table 3.18).

Table 3.18: Percent distribution of not Working Population 16 Years or Older by Reasons, SDHS-2014, DPRK

Reasons for not working	Males			Females		
	Urban	Rural	Total	Urban	Rural	Total
Normally Working, but sick/holiday	2.5	3.1	2.7	1.2	1.2	1.2
Studying	38.0	27.0	34.1	11.2	8.7	10.3
Incapacitated	4.1	6.6	5.0	1.5	1.5	1.5
Retired	55.1	62.7	57.8	60.6	64.6	62.1
Doing Housework	0.0	0.1	0.0	25.2	23.6	24.6
Doing nothing/Others	0.3	0.5	0.4	0.3	0.4	0.4
Total	100.0 (2,386)	100.0 (1,504)	100.0 (3,890)	100.0 (4,937)	100.0 (3,164)	100.0 (8,101)

On the other hand, a point of similarity between females and males is that more or less a proportion of females equal to men retired. Barring this observation, the reasons differed. While no men did housework, nearly a quarter of females reported of doing housework. While one in ten females reported studying as a reason, it is one in three among males. In sum, only those who are retired, studying or incapacitated do not work, but the rest are all engaged in some form of economic activity.

CHAPTER 4. FERTILITY AND FERTILITY PREFERENCES

In the 2014 SDHS, information on fertility was collected in various ways. First, a set of questions was asked to all women aged 15-49 years to determine the total number of boys and girls they had ever given birth to and the number of children who were still alive out of them. Then, a question was asked as to how many sons and daughters the female respondents had given birth to during the last 36 months before the survey. In addition to these questions, a birth history of their children was made for all ever married women aged 15-49 years at the time of the survey. In the birth history, questions were asked about the sex of the child, the date of birth, age, survival status and, if applicable, the date of death.

In the DPRK context, with international migration almost non-existent, the study of levels of fertility is very important as it is--next to mortality--the only component of population growth. In this chapter we will look into the level and characteristics of the recent fertility trends in the DPRK.

4.1. Children ever born (CEB)

The number of children ever born (lifetime fertility) includes all children born alive (i.e. excluding foetal deaths and stillborn children) during the lifetime of women up to the moment of the survey. The number of CEB includes all live-born children, whether alive or dead at the moment of the survey[4]. As such it is the lifetime fertility experience of women up to the moment of the survey

Table 4.1 shows the percent distribution of all ever married women aged 15-49 at the time of the survey by five-year-age groups and number of children ever born. In addition, the table shows the mean number of children ever born and the mean number of children surviving. The table reveals some interesting characteristics of fertility patterns in the DPRK. First, although the question on CEB was asked to all ever married women between 15 and 50 years of age, not

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[4] The definition of CEB used in the SDHS-2014 confirms with the Principles and Recommendations for Population Censuses (p.144). United Nations. (2008). *Principles and Recommendations for Population and Housing Censuses, Revision 2.* Department of Economic and Social Affairs. New York: United Nations.

even one woman fell in the category of 15-19 years, as all of the 1,960 women in this age category were never married. Teenage marriage and teenage birth are extremely rare in the DPRK. Second, it is remarkable how low the number of childless ever married women above the age of 35 is. Only 0.3 percent of women in each five-year-age category above 35 indicate that they never had a live birth. In a comparative study on infecundity, infertility and childlessness in developing countries, Rutstein and Shah showed that out of 47 countries in the study, only four had levels of childlessness in the age group of 40-44 years below one percent. Childlessness in their study was defined as the percentage of married women (40-44 years of age) who had no surviving children. The country with the lowest childlessness was Kyrgyzstan with a level of 0.5 percent[5]. Peru, Vietnam and Uzbekistan all had 0.9 percent childlessness. With a level of 0.3, the DPRK is well below all of the countries in the study.

Table 4.1: Percent distribution of all Ever Married Women 15-49 Years by Mean Number of Children Ever Born and Living, According to Age Group, SDHS-2014, DPRK

| Age | % of children ever born | | | | | | Total Number of Ever Married Women | Mean Number of Children Ever Born | Mean Number of Living Children |
| | 0 | 1 | 2 | 3 | 4 | Total | | | |
	%	%	%	%	%	%			
15-19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-
20-24	39.7	56.6	3.6	0.0	0.0	100.0	414	0.64	0.63
25-29	12.4	55.6	30.8	1.1	0.0	100.0	1,530	1.21	1.18
30-34	1.0	29.9	62.1	6.8	0.2	100.0	1,775	1.75	1.72
35-39	0.3	21.5	58.9	18.4	0.9	100.0	1,794	1.98	1.94
40-44	0.3	24.5	56.8	17.2	1.3	100.0	2,353	1.95	1.91
45-49	0.3	22.4	65.9	10.7	0.7	100.0	2,169	1.89	1.88
Not reported	0.0	0.0	0.0	0.0	0.0	0.0	0	-	-
Total	3.8	30.4	54.1	11.0	0.6	100.0	10,035	1.74	1.71

Another interesting characteristic of fertility shown in Table 4.1 is the very low percentage of women who report a parity of four. The highest percentage can be found in the age category of 40-44, where a mere 1.3 percent of ever married women indicate they gave birth to four children. No women in the survey reported a parity of five or higher. In general, more than 95 percent of women in the DPRK have one, two or three children ever born. Having two children clearly is the norm. Above the age of 35, about 60 percent of women have two children.

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[5] Rutstein, Shea O. and Iqbal H. Shah, 2004. Infecundity, Infertility, and Childlessness in Developing Countries. DHS Comparative Reports No. 9. Calverton, Maryland, USA: ORC Macro and the World Health Organization.

Among all ever married women in the survey--irrespective of their age--the mean number of children ever born is 1.74. Obviously, women at younger ages have lower numbers. The fact that the mean number of children surviving is so close to the mean number of children ever born (1.71 against 1.74) is a clear indication that mortality levels in infancy, childhood and adolescence are low.

The mean number of CEB in the SDHS-2014 is somewhat lower than that observed in the 2010 Reproductive Health Survey. At that time ever married women of all ages reported a mean number of CEB of 1.93. For the age groups of above 35 the number of CEB was around 2 (2.06, 2.13 and 2.10 respectively)[6]. This may be an indication that the level of fertility has somewhat decreased in recent years. However, fertility estimates based on CEB carry a major weakness as they make no reference to the time or period when events took place and are based on information about children born at different periods throughout a woman's reproductive age span. A much more solid analytical tool to study levels and age patterns of fertility is a period fertility table.

4.2. Period Fertility Tables

Table 4.2 presents the period fertility table for the 2014 SDHS, together with the fertility tables for the 1993 and 2008 population censuses. In addition, wherever information is available we have included extra fertility indicators.

The crude birth rate (CBR) is simply the number of births in a given year divided by the total mid-year population multiplied by 1000. In 2014, the CBR was 14.0 per thousand, which is only marginally lower than in 2008 (14.4). In 1993, the birth rate was still considerably higher (20.6). The level of the CBR was slightly higher in rural areas than in urban areas, respectively 14.7 against 13.5 per thousand.

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[6] Central Bureau of Statistics, 2012, Democratic People's Republic of Korea, 2010 RH Survey Report. Pyongyang, August, Juche101 (2012), p. 17.

Table 4.2: Age-specific and total fertility rates, the general fertility rate and the crude birth rate from SDHS-2014 in comparison to censuses 2008 and 1993

Age of Women	1993	2008			2014		
		Urban	Rural	Total	Urban	Rural	Total
15-19	0.000	0.000	0.001	0.001	0.000	0.000	0.000
20-24	0.049	0.050	0.072	0.059	0.034	0.046	0.039
25-29	0.265	0.200	0.226	0.210	0.195	0.203	0.198
30-34	0.101	0.108	0.113	0.110	0.131	0.130	0.130
35-39	0.019	0.017	0.021	0.019	0.008	0.014	0.011
40-44	0.003	0.003	0.004	0.003	0.001	0.001	0.001
45-49	0.001	0.000	0.001	0.000	0.000	0.000	0.000
TFR	2.20	1.89	2.19	2.01	1.84	1.97	1.89
GFR	-	50.9	58.1	53.7	49.4	53.6	51.0
CBR	20.6	-	-	14.4	13.5	14.7	14.0
Mean age of child bearing	28.6	28.8	28.6	28.7	29.1	28.9	29.0

Though widely used, the crude birth rate as a comparative measure carries several disadvantages, as it does not eliminate the effect of differences in age structures. Therefore, instead of dividing the number of births in a year by the total population, the ratio of the number of births to the mid-year population of females in their reproductive ages (i.e. 15-49 years) is an improvement. This measure is called the General Fertility Rate (GFR). In the case of the SDHS-2014, the GFR equals 51.0.

The total fertility rate (TFR) is a more robust indicator of the period fertility behaviour of a population. It is *'the average number of children a woman would bear if she survived through the end of the reproductive age span and experienced at each age a particular set of age-specific fertility rates'* [7]. The TFR is calculated as five times the sum of the age-specific fertility rates. In 2014 the TFR stood at 1.89 children per woman. Fertility was slightly higher among women residing in rural areas (1.97) than in urban areas (1.84). Fertility decreased during the fifteen-year period between the last two censuses in 1993 and 2008 from a level of 2.2 to 2.01. Since then fertility further dropped to the current level of 1.89. Table 4.2 shows that the drop was more pronounced in rural than in urban areas.

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[7] Preston, S. H., Heuveline, P., & Guillot, M. (2001). *Demography: Measuring and Modelling. Population Processes*. Oxford: Blackwell Publishing Ltd, p.92.

Figure 4.1: Age-specific fertility rates of SDHS-2014 in comparison to censuses 2008 and 1993
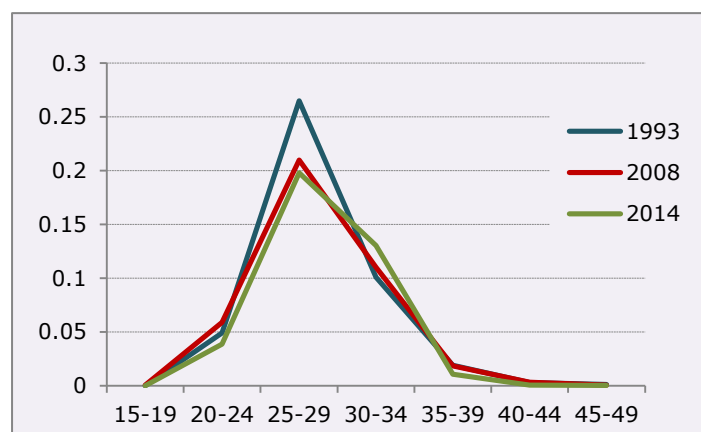
Figure 4.1 depicts the age-specific fertility rates for 1993, 2008 and 2014. The graph clearly shows that fertility is very concentrated in the age groups of 25-29 and 30-34. It is clear that DPRK women get their babies in a very uniform way: very few women give birth at a young age and after age 35. As we saw before, about 60 percent of women get two children and over the years they have typically done this between the ages of 25 and 35. Between 1993 and 2014, the mean age of the fertility schedule has only slightly changed. Currently the mean age at childbearing stands at 29.0 years--this is only marginally different from the 2008 and 1993 figures (28.7 and 28.6 years). Almost no difference exists between urban and rural areas in terms of timing of fertility.

The only slight change in the age pattern of fertility that can be observed is that women in the age group of 30-34 years in 2014 have somewhat higher fertility than in 2008. Currently, the age-specific fertility rate for women 30 to 34 years old is 0.130 against 0.110 in 2008.

4.3. Age at First Birth

The total number of children a woman will give birth to during her reproductive age span is dependent on the age at which she has her first child, the spacing of births and the age at which she ends having children. In this section we look into the age at first birth. Table 4.3 shows the median age at first birth among ever married women aged 20-49 years and 25-49 years by a selected number of background characteristics. Note that the table is restricted to ever married women and that the median age of first birth for <u>all</u> women, regardless of their marital status, would be higher than the figures presented.

Table 4.3: Median Age at First Birth among Women 20-49 and 25-49 years, SDHS-2014, DPRK

Background Characteristics	Women aged 20-49	Women aged 25-49
Place of Residence		
Urban	25.0	25.4
Rural	24.7	25.1
Province		
Ryanggang	24.9	25.5
North Hamgyong/Rason	25.0	25.4
South Hamgyong	25.1	25.4
Kangwon	24.8	25.3
Jagang	24.8	25.3
North Phyongan	24.8	25.3
South Phyongan/Nampho	24.8	25.1
North Hwanghae	24.4	25.0
South Hwanghae	24.4	24.9
Pyongyang	25.4	25.6
Marital Status		
Married	24.8	25.2
Widowed	26.1	26.1
Separated	-	-
Divorced	28.0	29.0
Education		
Secondary senior	24.8	25.3
Vocational (< 3 yrs)	24.8	25.0
Post-Secondary (3yrs)	25.1	25.4
Tertiary +	25.1	25.3
Total	**24.9**	**25.3**

Table 4.3 confirms our earlier observations that a) the age at which women start having children is quite late in the DPRK and b) the fertility behaviour of women is quite uniform. The median age at which ever married women aged 25-49 years have their first birth is 25.3 years. This means that by age 25.3 years half of all ever married women had given birth and obviously that by that age the other half had not yet delivered. The timing of the first birth is closely related to the high participation of women in the workforce. In the DPRK, women enter the workforce very shortly after completion of education. In the age group of 20-24, 91 percent of young women are employed. It seems that after entering the labour force, they wait for some years to get married and then start having children. As we saw before the mean age at marriage for women is around 25 years, i.e. about the same age as the median age for having a first child. This

suggests that generally after marriage women don't wait long to get their first child.

There is only a very small difference in the median age at first birth between rural and urban places of residence and provinces. The median age at first birth only differs with a couple of months between rural and urban areas: 25.1 years against 25.4 among women in the age bracket of 25-49 years. Pyongyang has the highest median age at first birth (25.6 years), but is less than a year higher than South Hwanghae that has the lowest age (24.9 years). One would expect large differences in the timing of the first birth between women with higher and lower educational attainments, but also here differentials are rather minimal. The median age at first childbearing for women with advanced tertiary education is exactly one year higher than for women with a vocational training of less than three years (26 against 25 years). Finally, rather big differences exist between women who were divorced and married at the time of the survey. However, as there were only very few women in the divorced state, this difference may be easily caused by small sample variability.

4.4. Birth Intervals

It is well known that short birth intervals are closely connected to size and weight of new born babies and to the nutritional status of young children, and that they increase the risk of pregnancy complications for young mothers. There is an increased risk of neonatal mortality, under nutrition, and morbidity during pregnancy if the birth interval with the previous child is less than 36 months. If the interval is less than 24 months, then the risks become much higher. Birth intervals of longer than 60 months also pose elevated risks in terms of pregnancy complications for mothers and causes higher neonatal and perinatal mortality[8]. A birth interval between 36 and 59 months is considered optimal to safeguard the health of mother and child.

Using birth history data from 179 Demographic Health Surveys (DHS) in 72 countries, Rutstein (2011) examined trends in birth intervals in the developing world. Intervals were examined for births that took place during the last five years before the survey. In her study she found that the overall median birth interval length was 32.1 months. About one in four children were born after a

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[8] Rutstein, Shea O. 2011. Trends in Birth Spacing. DHS Comparative Reports No. 28. Calverton, Maryland, USA: ICF, Macro.

birth interval of less than 24 months, running increased risk of morbidity, malnutrition and early death. More than half of all births (57 percent) occurred after an interval of less than 36 months and 12 percent were born after a very long interval of more than five years.

Table 4.4: Percent distribution of non-first births in the five years preceding the survey by number of months since preceding birth, and median number of months since preceding birth, according to background characteristics, SDHS-2014, DPRK

Background Characteristics	Months since preceding birth							Number of non-first births	Median number of months since preceding birth
	7-17	18-23	24-35	37-47	48-59	60+	Total		
Age of Mother									
15-19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-
20-29	6.5	21.2	43.4	20.2	6.9	1.8	100.0	494	29.0
30-39	3.5	15.2	33.2	27.0	14.0	7.2	100.0	1,035	35.0
40-49	0.0	3.1	44.7	11.8	37.5	3.0	100.0	13	47.0
Sex of Preceding Birth									
Male	3.8	17.2	37.8	23.7	11.3	6.3	100.0	769	32.0
Female	5.1	16.7	35.1	25.8	12.6	4.7	100.0	773	33.0
Birth Order									
2-3	4.4	17.0	36.5	24.8	11.8	5.5	100.0	1,531	32.0
4-6	12.2*	4.0*	31.8*	14.6*	33.6*	3.9*	100.0	11	*
7+	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-
Place of Residence									
Urban	4.6	18.2	33.8	26.0	11.0	6.4	100.0	802	32.0
Rural	4.3	15.3	39.7	23.2	13.1	4.3	100.0	740	33.0
Province									
Ryanggang	6.4*	15.6*	41.9	21.5	9.4*	5.2*	100.0	172	30.0
N. Hamgyong / Rason	1.7*	25.9	32.0	22.3	11.2*	6.9*	100.0	116	32.0
S. Hamgyong	3.8*	18.2*	33.9	27.3	11.7*	5.0*	100.0	176	33.0
Kangwon	2.9*	13.5*	38.6	27.9*	11.8*	5.3*	100.0	134	34.0
Jagang	2.7*	15.5*	45.2	23.7	10.1*	2.7*	100.0	148	32.0
N. Phyongan	3.2*	12.8	30.2	27.2	15.5*	11.0*	100.0	155	38.0
S. Phyongan / Nampho	4.9*	12.1	31.3	29.7	12.9	9.1	100.0	206	37.0
N. Hwanghae	4.0*	15.4	39.6	19.6	18.1	3.2	100.0	129	33.0
S. Hwanghae	3.9*	13.5	42.6	25.9	12.2	1.9	100.0	155	31.0
Pyongyang	8.3*	26.8	41.6	17.1	5.9	0.3	100.0	151	26.0
Marital Status									
Married	4.5	17.1	36.2	24.9	11.9	5.5	100.0	1,514	32.0
Widowed and others	3.6*	11.9*	45.5*	18.0*	16.0*	4.9*	100.0	28	30.0*

Contd.

Background Characteristics	Months since preceding birth							Number of non-first births	Median number of months since preceding birth
	7-17	18-23	24-35	37-47	48-59	60+	Total		
Education									
Secondary senior	3.6	17.6	36.7	23.7	12.6	5.8	100.0	1,227	33.0
Vocational (< 3 yrs)	3.9*	19.1*	27.9*	30.6*	12.2*	6.3*	100.0	66	34.0
Post-Secondary (3yrs)	10.8*	9.2*	35.0	27.7	12.9*	4.3*	100.0	103	34.0
Tertiary+	7.1*	15.5*	38.9	28.8	6.1*	3.6*	100.0	146	30.0
Total	4.4	17.0	36.4	24.8	11.9	5.5	100.0	1,542	32.0

Cell frequency<25 cases

On the basis of the SDHS-2014 we performed a similar analysis for the DPRK. The results of this analysis are presented in Table 4.4. In addition to national data we also looked into differentials by age, sex of previous birth, birth order of the most recent child, residence, marital status and educational attainment.

The median length of birth intervals in the DPRK (32.0 months) is about the same as the overall median found by Rutstein (32.1 months). In the SDHS-2014, 21.4 percent of all non-first births occurred less than 24 months after the preceding birth, 57.8 percent had a birth interval of less than 36 months and 5.5 percent were born more than five years after their preceding sibling. This means that less than four out of ten children are born after a birth interval that entails a lower risk perinatal and neonatal mortality and pregnancy complications. These results show that in order to safeguard the health of both mothers and children there is still a clear need to promote the use of contraceptives for better birth spacing.

Looking at birth interval differentials among various groups, we notice some interesting trends. First, with a median duration of 29 months, women in the age group of 20-29 years tend to have shorter intervals than somewhat older women. In this group of younger women, only 27.1 percent have a safe interval of 36-49 months. Another interesting finding is that women in Pyongyang have considerably shorter birth intervals than women in provinces. With a median interval of 26 months Pyongyang women space their babies a full year shorter than women in North Phyongan, the province with the widest birth intervals. In Pyongyang, 35 percent of women have birth intervals shorter than two years and only 23.0 percent have a safe interval between three and five years. The longest median birth intervals can be observed among women 40-49 years old

and among birth orders fourth or higher. It should be noted that in both categories the number of respondents is very low (13 and 11 respectively), which may very well refer to births that were not actually planned. Other categories show results that are relatively uniform.

4.5. Desire for More Children

In order to obtain information on fertility preferences, SDHS-2014 asked currently married women of their desire for more children. The wording of the questions for pregnant and non-pregnant women was different. In case of non-pregnant women the question posed was: "Would you like to have (a/another) child or would you prefer not to have any (more) children," while pregnant women were asked,"After the child you are expecting now, would you like to have another child or would you prefer not to have any more children?" In addition, the survey also collected information on the ideal number of children and cross-tabulated information on the number of living children to get an idea of the difference between actual and ideal. The questions posed in the survey followed the standard Demographic and Health Survey (DHS) set of questions that were followed elsewhere. All these analyses have been discussed in this section.

Figure 4.2: Desire for Children, DPRK 2014
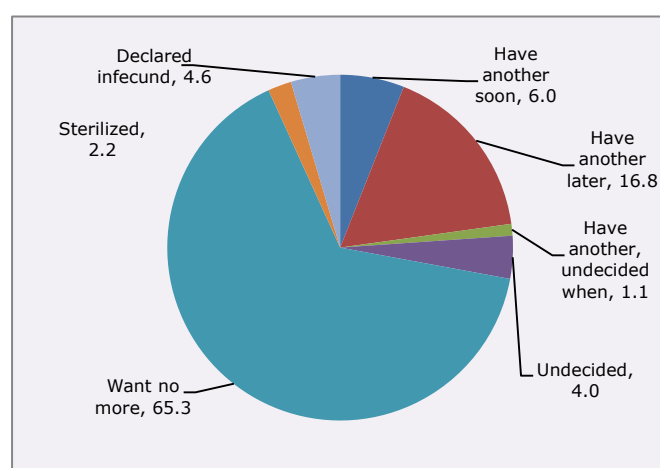
Figure 4.2 shows future fertility preferences of currently married women aged 15-49. The overall percentage who wants no more children is nearly two thirds of all currently married women, 17 percent want one later and about six percent want soon. Undecided to have another child; undecided when to have one; infecund and sterilized are the other responses. The desire to stop childbearing increase rapidly as the number of living children increases and 78 percent of currently married women with three or more children want to stop childbearing. Women with no child constituted four percent of all currently married women and interestingly, about 13 percent did not desire to have a child.

4.6. Ideal Number of Children

To assess the women's ideal number of children, SDHS-2014 asked women--both currently- and ever-married women aged 15-49--the number of children they would like to have if they start over again. Women with no children were asked, "If you could choose exactly the number of children to have in your whole life, how many would that be?" Those who already had children were asked, "If you could go back to the time you did not have children and could choose exactly the number of children to have in your whole life, how many would that be?" Besides, the wanted and unwanted fertility has also been compared.

Table 4.5: Mean ideal number of children for all ever married women 15-49 years by background characteristics, SDHS-2014, DPRK

Background Characteristics	Mean ideal number of children
Age of Woman	
20-29	1.83
30-39	1.83
40-49	1.96
Place of Residence	
Urban	1.82
Rural	1.99
Ryanggang	2.00
North Hamgyong /Rason	1.80
South Hamgyong	1.89
Kangwon	1.86
Jagang	1.88
North Phyongan	1.92
South Phyongan /Nampho	1.91
North Hwanghae	2.02
South Hwanghae	1.94
Pyongyang	1.77
Marital Status	
Married	1.89
Widowed	1.93
Separated/Divorced	1.82*
Education	
Secondary Senior	1.91
Vocational (< 3yrs)	1.87
Post-Secondary (3yrs)	1.89
Tertiary+	1.76
Total	**1.89**

 * Mean calculated on the basis of small numbers

Table 4.5 reveals that the mean ideal number of children preferred by ever-married women in the DPRK is 1.89, which is slightly higher than the mean number of children ever born to them. Age-wise, older women, especially those above 40 years, had preference for higher number of ideal children in comparison to the younger age cohorts, but the difference is negligible. Likewise, urban-rural differentials exist (1.82 in urban as against 1.99 in rural) and half of the provinces ideally preferred to have more children than the national average with North Hwanghae and Ryanggang leading from the front. Concerning marital status, women who were either separated or divorced, preferred to have less children than widowed or married. In case of education, the difference between those women who were educated to secondary senior level and those who had tertiary or higher education is apparent. While women with secondary school education ideally preferred 1.91 children, those with tertiary and above education had preference for 1.76 children. In sum, the mean ideal number of children preferred and the variations by social background characteristics are low though higher education beyond the compulsory education revealed increasing differences.

Analysis of only the currently married women by ideal number of children preferred by the number of living children tabulated in Table 4.6 indicates that three fifths of women preferred to ideally have two children, a quarter preferred one child, while the remaining 14 percent preferred three children.

Table 4.6: Percent distribution of currently married women 15-49 years by ideal number of children desired, according to number of living children, SDHS-2014, DPRK

Ideal no. of Children	Number of Living Children				
	0	1	2	3+	Total
1	24.9	28.5	24.1	21.1	25.1
2	65.3	59.6	61.2	60.6	60.8
3	9.8	11.9	14.7	18.4	14.1

Analysis by number of living children reveals that women with no children had higher preference than others to ideally have two children and a slightly higher proportion of women with three or more children preferred to have three children. Nonetheless on the whole, the ideal number of children preferred by majority of currently married women in the DPRK is two.

A comparison of provinces by ideal number of children and TFR has been presented in Figure 4.3. The figure reveals that the ideal number of children desired is higher than TFR in six out of the ten provinces. Provinces reporting

higher ideal number of children than TFR are North Hwanghae, South Hamgyong, North and South Phyongan, Kangwon and North Hamgyong, implying that the actual fertility is lower than wanted fertility, while it is the other way round in Ryanggang, South Hwanghae, Jagang and Pyongyang.

Figure 4.3: Ideal no. of Children and TFR, DPRK 2014

North Hamgyong had 20 percent lower fertility than the ideal while Ryanggang had the highest percent of unwanted fertility (15%) followed by 12 percent each in Jagang and South Hwanghae. Interestingly, at the aggregated level, the ideal number of children and TFR match and are at the same level because rural TFR was lower than the ideal and urban TFR decimal points higher than the ideal.

CHAPTER 5. FAMILY PLANNING

This chapter presents information on various aspects of family planning collected from women. In SDHS-2014, all ever-married women between 15 and 49 years were asked questions about their knowledge of various family planning methods. Information on ever and current use of family planning, sources from where they avail the services, their perceptions about the quality of family planning services, unmet need for family planning and reasons for dropping out and not using among past and never users have been gathered and discussed in the following sections.

5.1. Knowledge about Family Planning Methods

Information has been collected on the knowledge of modern and traditional methods of family planning that include female and male sterilization, IUD, injectables, pill, female condoms and two traditional methods of rhythm and withdrawal, and compared with the survey on reproductive health conducted in 2010.

Table 5.1: Ever Married Women 15-49 years who have heard of any contraceptive method, by specific method, DPRK

FP Methods	RHS-2010			SDHS-2014		
	Urban	Rural	Total	Urban	Rural	Total
Any modern method	-	-	-	100.0	98.7	99.5
Female Sterilization	83.3	80.2	82.1	84.9	82.2	83.8
Male Sterilization	70.7	55.5	64.7	73.7	67.3	71.2
IUD	94.8	94.4	94.7	100.0	97.3	98.9
Injectable	17.9	14.5	16.6	33.8	30.3	32.5
Pill	61.8	55.7	59.4	64.8	62.3	63.8
Condom	63.2	57.5	60.9	67.5	61.7	65.2
Female Condom	6.6	6.4	6.5	14.3	14.2	14.3
Any traditional method	-	-	-	93.6	92.9	93.3
Rhythm method	86.4	82.2	84.8	88.8	87.6	88.3
Withdrawal	58.8	58.3	58.6	65.0	66.1	65.5
Other methods known	11.5	9.3	10.6	19.1	13.0	16.8
Number of respondents	2,859	2,234	5,093	5,781	4,254	10,035
Mean number of methods known	-	-	-	6.1	5.8	6.0

Table 5.1 shows the knowledge of specific family planning methods among women by urban and rural areas. Knowledge of any modern method is almost universal (99.5%) while it is over 90 percent in case of traditional methods. Knowledge seems to be slightly better among urban women than among their rural counterparts, barring withdrawal method. Knowledge about IUD is the highest and the least for female condoms with about a third being aware of injectables. Further results indicate that among traditional methods, rhythm is more popularly known than withdrawal. On average, each women surveyed is aware of six methods of family planning. Comparison of SDHS-2014 results with RHS-2010 reveals that the knowledge of all the family planning methods has increased and has doubled in case of injectables--an increase from 17 percent in 2010 to 33 percent in 2014.

Analysis of knowledge by background characteristics presented in Table 5.2 reveals that knowledge of any method as well as any modern method is practically universal among women barring the younger cohort of women aged 20-24 years. As observed, knowledge among urban women is universal and their rural counterparts are not lagging behind. Province-wise, hardly any variations exist and so is the case for marital status and education. It can therefore be inferred that irrespective of the background characteristics and place of residence, knowledge of family planning methods is universal in the DPRK.

Table 5.2: Percentage of ever married women 15-49 years who have heard of at least one contraceptive method and at least one modern method, by background characteristics, SDHS-2014, DPRK

Background Characteristics	Heard of any method	Heard of any modern method	Number of ever married women
Age			
20-24	97.5	96.4	414
25-29	99.4	99.0	1,530
30-34	99.9	99.6	1,775
35-39	100.0	99.7	1,794
40-44	100.0	99.7	2,353
45-49	100.0	99.9	2,169
Place of Residence			
Urban	100.0	100.0	5,781
Rural	99.5	98.7	4,254

Contd.

Background Characteristics	Heard of any method	Heard of any modern method	Number of ever married women
Province			
Ryanggang	100.0	100.0	971
North Hamgyong / Rason	99.7	99.6	1,031
South Hamgyong	99.7	99.6	1,180
Kangwon	99.4	99.0	1,065
Jagang	99.7	99.1	934
North Phyongan	99.6	99.4	947
South Phyongan / Nampho	100.0	99.4	1,190
North Hwanghae	99.9	99.7	903
South Hwanghae	99.9	99.6	913
Pyongyang	100.0	99.8	901
Marital Status			
Married	99.8	99.5	9,626
Widowed	99.5	99.5	312
Divorced/Separated	100.0	98.6	97
Education			
Secondary senior	99.8	99.5	8,066
Vocational (< 3yrs)	100.0	99.1	327
Post-Secondary (3yrs)	99.7	99.7	672
Tertiary +	100.0	100.0	970
Total	**99.8**	**99.5**	**10,035**

5.2. Current Use of Family Planning Methods

The current use of family planning is indicated by the contraceptive prevalence rate (CPR) and defined as the percentage of currently married women aged 15-49 years who or whose spouses are currently using a family planning method. With family planning being one of the proximate determinants of fertility, it is important to understand the levels, trends and differentials in current use of family planning in the DPRK.

The current use of different methods of family planning among currently married women in RHS-2010 and SDHS-2014 is shown in Table 5.3. The contraceptive prevalence rate in the DPRK is 78 percent, with 98 percent of current users using a modern method of contraception. IUD is the most popular method with around three fourths of women currently using it. In terms of method-mix, it accounts for no less than 95 percent of total contraceptive use and 97 percent of modern method use. Current use of female sterilization, other spacing and natural methods are negligible, implying that the national family planning

programme is completely dependent on one method for lack of contraceptive choice at the national level. It is to be stated here that UNFPA as part of its Country Programme provides a basket of contraceptive choice in the 11 project areas that cover six percent of the population and therefore the prevalence of injectables and pill are seen.

Table 5.3: Percentage of currently married women 15-49 years by current use of a contraceptive method, 2010-2014, DPRK

Current Use	RHS-2010			SDHS-2014		
	Urban	Rural	Total	Urban	Rural	Total
Any modern method	68.1	61.0	65.3	77.1	75.7	76.5
Female Sterilization	3.1	3.2	3.2	2.5	1.8	2.2
Male Sterilization	0.0	0.0	0.0	0.0	0.0	0.0
IUD	64.3	57.2	61.5	74.2	73.7	74.0
Injectable	0.1	0.3	0.2	0.1*	0.0	0.0
Pill	0.2	0.2	0.2	0.0	0.2*	0.1*
Condom	0.2	0.1	0.2	0.3*	0.1*	0.2*
Any traditional method	6.3	5.6	6.0	1.4	2.0	1.6
Rhythm method	4.5	4.6	4.5	1.2	1.6	1.4
Withdrawal	1.7	1.1	1.5	0.1*	0.4*	0.2*
Other methods	-	-	-	0.0	0.0	0.0
Any Method	73.6	66.1	70.6	78.4	77.8	78.2
Number of women	-	-	-	5,540	4,086	9,626

Cell frequency <25 cases

Concerning current use of contraception in urban and rural areas, the pattern looks identical and CPR for all methods in urban areas is 0.6 percentage points more than rural areas with the difference widening a bit more for modern method use. Nonetheless, the level of CPR is high and couples mainly rely on government service provisions for meeting their contraceptive needs.

Figure 5.1: Trends in Contraceptive Prevalence Rate, DPRK

The CPR has increased from 71 percent in 2010 to 78 percent in 2014 for all methods whereas for has been from 65 percent to 77

percent in the corresponding period. The increase has mainly come from a 12 percentage point rise in IUD while all the other methods have registered a decline with condom use remaining at the same level. The use of traditional method that was the most popular after IUD in 2010 has reduced from six percent to less than two percent in 2014 (Table 5.3 & Figure 5.1).

Analysis of age-wise contraceptive use (Figure 5.2) reveals that 40 percent of women less than 30 years old are currently using a method of contraception while it is more than double (87%) among women aged over 30 years. This pattern is true for all the methods with the exception of traditional method use, which is at the same level for both the age categories. IUD use among women less than 30 is 38 percent and increases substantially to over 80 percent for women aged 30 years and older. Given that the Singulate female age of marriage is 25 years,

Figure 5.2: Contraceptive Use by Age, SDHS-2014, DPRK

the use of IUD as a spacing method among the younger women is understandable, but on the contrary older women in the absence of contraceptive choices perhaps prefer IUD as a substitute to limiting methods.
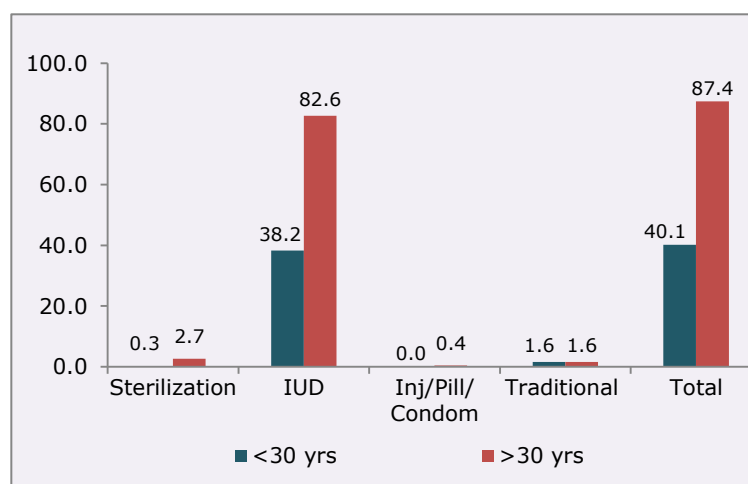
Differentials in contraceptive use by selected background characteristics are presented in Table 5.4. The current use of contraceptives increases with the birth order of the children the woman has had. For instance, the use of contraceptives before the first child is born is negligible, as less than one percent of women are using a method. This increases to 80 percent for women having 1-2 children and over 90 percent for those having three children. Perhaps socially and culturally, the use of contraception, especially a spacing method, before a child is born is not a common practice in the DPRK, but after having a child(ren), its use increases tremendously with a large proportion accepting IUD.

As observed earlier, urban-rural differentials are nominal. Likewise, province-level variations in current use of contraception are not substantial. The current use of any contraceptive method is highest in South Hamgyong (80%) while the smallest is in North Hamgyong (74%). In case of modern contraceptive use, CPR ranges between 73 percent and 79 percent in North Phyongan and South Hwanghae respectively. Similar to the observations made earlier, education differentials too are minimal and range from a minimum of 71 percent among those who have had vocational education (< 3years) to a maximum of 83 percent for those with post-secondary education (3 years). Deducing from the foregoing analysis, it appears that there is homogeneity in the pattern of contraceptive use and the background status of the respondents doesn't seem to determine any significant effect on its use. Probably, a multivariate analysis by controlling for various factors would throw more light on the background determinants of contraceptive use.

Table 5.4: Percentage of currently married women 15-49 years currently using contraception by background characteristics, SDHS-2014, DPRK

Background Characteristics	Any method	Any modern method	Steri-lization	IUD	Injectable/ Pill/ Condom	Any traditional method	Not currently using	Number of women
Birth Order								
0	0.3*	0.3*	0.3*	0.0	0.0	0.0	99.7	373
1-2	79.8	78.0	2.4	75.3	0.4	1.7	20.2	8,018
3+	92.1	90.7	1.7*	88.6	0.3*	1.4*	7.9	1,235
Place of Residence								
Urban	78.4	77.1	2.5	74.2	0.4*	1.4	21.6	5,540
Rural	77.8	75.7	1.8	73.7	0.3*	2.0	22.2	4,086
Province								
Ryanggang	77.4	76.7	2.1*	74.3	0.2*	0.8*	22.6	931
N. Hamgyong / Rason	74.3	73.9	3.2	69.6	1.1*	0.4*	25.7	992
S. Hamgyong	80.7	78.6	4.5	73.9	0.2*	2.1*	19.3	1,151
Kangwon	75.3	75.2	2.6	72.2	0.4*	0.1*	24.7	994
Jagang	79.9	78.7	1.1*	77.2	0.3*	1.2*	20.1	899
N. Phyongan	80.2	79.0	2.1*	76.4	0.4*	1.2*	19.8	889
S. Phyongan / Nampho	78.3	75.9	1.7*	74.0	0.2*	2.4	21.7	1,147
N. Hwanghae	78.4	77.2	1.4*	75.8	0.0	1.1*	21.6	873
S. Hwanghae	75.6	73.1	0.8*	72.3	0.0	2.5*	24.4	878
Pyongyang	79.4	77.1	1.6*	74.9	0.5*	2.3*	20.6	872

Contd.

Background Characteristics	Any method	Any modern method	Steri-lization	IUD	Injectable/ Pill/ Condom	Any traditional method	Not currently using	Number of women
Education								
Secondary senior	77.9	76.3	1.9	74.1	0.3	1.6	22.1	7,733
Vocational (< 3 yrs)	70.8	69.3	0.3*	68.8	0.1*	1.5*	29.2	322
Post-Secondary (3yrs)	82.6	79.9	4.5	73.5	1.9*	2.7*	17.4	645
Tertiary +	79.5	78.3	3.2	75.1	0.0	1.2*	20.5	926
Total	**78.2**	**76.5**	**2.2**	**74.0**	**0.3**	**1.6**	**21.8**	**9,626**

* Cell frequency <25 cases

5.3. Source of Family Planning Methods

Family planning services and supplies in the DPRK are provided primarily through a network of central/provincial hospitals, county/district hospitals and ri hospitals/clinics. Women currently using a modern spacing method of contraception were asked where they obtained the method most recently and, in case of sterilization, the source where the sterilization operation was performed was collected.

Table 5.5: Sources of Family Planning Methods among Current Users of Contraception, SDHS-2014, DPRK

Source of availing FP Services	FP Method			
	Sterilization	IUD	Other Modern Spacing methods	Total
Central/Provincial level Hospital	38.8	4.4	5.7*	**5.4**
County/District People's Hospital	61.2	94.0	65.7*	**92.9**
Ri People's Hospital/ clinic	0.0	1.6	20.0*	**1.7**
Other	0.0	0.0	8.6*	**0.0**
Total	100.0 (213)	100.0 (7,121)	100.0 (35)	100.0 (7,369)

* Cell frequency <25 cases

Deductions from Table 5.5 reveal that nine out of ten current users of contraception depend on county/district hospitals for their services, five percent on central and provincial hospitals and the remaining on ri hospitals/clinics. Given the availability of and accessibility to family services at the county and

district hospitals, they seem to be the most preferred source of availing services among the current users of family planning.

5.4. Informed Choice

Women who are aware of a range of methods and are well informed about the side-effects and problems associated with the methods are in a better position to make informed choices about the use of contraception. Similar to the question posed in DHS, current users who adopted modern methods in the five years preceding the survey were asked if they were informed of what to do if they had side-effects with the adopted method and whether they were told about the other methods they could use. Table 5.6 shows these indicators of informed choice by the type of method used and source of the method.

Over four fifths of current users of contraception were informed about side-effects and what to do if they experience such side-effects. Further two thirds of them were informed by a health or family planning worker of the other methods they could use. Among the modern methods, IUD users are more likely to be provided with each of the two types of information in comparison to others. Surprisingly, information about sterilization and condom was not been provided at all and due to less number of users of injectables and oral pills, data could not be interpreted. As far as the source is concerned, county/district hospital is the most popular one. Nonetheless, juxtaposing our findings on method-specific contraceptive use and informed choice, IUD stands apart from other methods. Perhaps due to better service provisions for IUD in the national family planning programme, health workers too might have been self-motivated to convince the potential clients to accept IUD over other methods.

Table 5.6: Current users of selected modern methods 15-49 years who started use within the five years preceding the survey, who were informed about what to do if they experienced side effects and the percentage who were informed about other methods they could use, by method and initial source, SDHS-2014, DPRK

Method/Source	Percentage who were informed about what to do if experienced side effects	Percentage who were informed by a health or family planning worker of other methods that could be used	Number of women
Method			
Female Sterilization	-	-	0
IUD	83.7	66.2	2,294
Injectables	100.0*	100.0*	1
Pill	13.8*	42.7*	8
Condom	-	-	0
Source of Method			
Central/Provincial level Hospital	64.3	22.7	108
County/District People's Hospital	84.6	68.4	2,157
Ri People's Hospital/ clinic	85.4*	72.5*	35
Other	0.0	22.8*	3
Total	83.5	66.1	2,303

Cell frequency<25 cases

5.5. Contraceptive Discontinuation

The SDHS posed questions to currently married women, who were past users but current non-users of any method of contraception, about the main reason for discontinuation. From the perspective of programming, it is very important to understand and evolve appropriate strategies for addressing them. Table 5.7 provides an idea of the various reasons by age of the women. About 14 percent of currently married women who were past users of contraception were non-users at the time of survey. The major reasons for opting out are: 43 percent wanted to get pregnant; a quarter of them had health concerns; 18 percent reported side-effects and 14 percent felt inconvenience in use, while a negligible proportion reported that their spouses disapproved.

Table 5.7: Percent distribution of past users 15-49 years who are not using a contraceptive method by reasons for discontinuation, SDHS-2014, DPRK

Age of Woman	Reasons for Discontinuation among past-users						
	Method failed/became pregnant while using	Wanted to Become pregnant	Husband disapproved	Health concerns	Side-effects	Incon-venient to use	Total
20-24	-	49.0	0.0	16.7	16.6	17.7	100.0 (179)
25-29	-	43.5	0.0	18.3	22.5	15.7	100.0 (376)
30-34	-	68.4	0.0	9.5	15.0	7.1*	100.0 (327)
35-39	1.6*	59.7	0.0	21.1	7.5*	10.1*	100.0 (179)
40-44	-	1.0*	5.9*	51.0	27.4	14.7*	100.0 (98)
45-49	6.1*	1.8*	0.6*	50.7	16.8	24.0	100.0 (198)
Total	1.1*	42.7	0.6*	23.7	17.6	14.3	100.0 (1,357)

Cell frequency<25 cases

Age-wise, the majority of young women, especially those aged less than 40 years, wanted to become pregnant. This aside, a substantial proportion too reported health concerns, side-effects and inconvenience in use. On the other hand, older women aged over 40 years had more concerns related to health, side-effects and inconvenience in use. Even though, informed choice seems to be good, though confined to IUD, there is probably a need to strengthen the counseling skills of providers and increase awareness of family planning messaging through appropriate behavioural change communication strategies.

5.6. Future Intension of Non-Users of Family Planning

The intension to use a family planning method in future is an indication of the potential demand for family planning services. Non-pregnant, currently married women who were not using any method of contraception were asked whether they intend to use a contraceptive method in future.

Table 5.8: Percent distribution of non-pregnant currently married women 15-49 years who are not using a contraceptive method by intention to use in the future, according to number of living children, SDHS-2014, DPRK

Intention to use in the future	Number of Living Children			
	1	2	3 or more	Total
Intends to use	86.9	73.0	68.1	79.2
Does not intend to use	7.4	15.3	19.7*	11.6
Unsure	5.7	11.7	12.0*	9.2
Total Non-Users	100.0 (1,065)	100.0 (695)	100.0 (116)	100.0 (2,251)

Cell frequency<25 cases

Table 5.8 shows intentions of non-pregnant non-users to use contraception in future by number of living children. The intention to use in future is very high,

Figure 5.3: Future Intention to Use Family Planning by Number of Living Children, SDHS-2014, DPRK
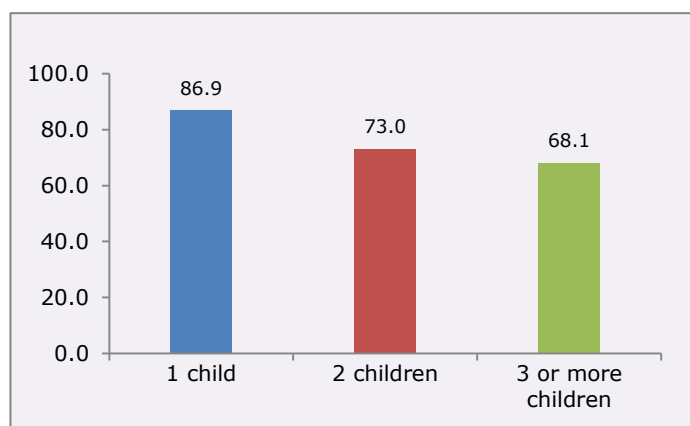
as four fifths of current non-users intend to use, over one tenth do not intend to use and the remaining are unsure. Analysis by number of living children indicates that a higher proportion of women with one living child intend to use. Intention to use in future decreases with increasing number of living children (Figure 5.3).

5.7. Need for Family Planning

With high intention to use family planning in future, analysis of unmet need and met need for family planning has been carried out. Unmet need for family planning is an important indicator for assessing the potential demand for family planning services. Currently married women who are not using any method of contraception but do not want any more children are defined as having an *unmet need for limiting* and those who are not using contraception but want to wait for two or more years before having another child are defined as having *unmet need for spacing*.

According to the data presented in Table 5.9, seven percent of currently married women in the DPRK have an unmet need for family planning. The unmet need is five percent for limiting while it is two percent for spacing. More than three quarters of women have a met need for family planning. Including unmet and met need, 84 percent of currently married women in the DPRK have a demand for family planning, of which 92 percent is satisfied (Figure 5.4)

Table 5.9: Percentage of Currently Married Women 15-49 years with unmet need for family planning, percentage with met need for family planning, and total demand for family planning, by background characteristics, SDHS-2014, DPRK

Background Characteristics	Unmet Need for FP for Spacing	Unmet Need for FP for Limiting	Total Unmet Need	Met Need for Spacing	Met Need for Limiting	Total Met need	Total Demand for Spacing	Total Demand for Limiting	Total Demand	Demand Satisfied	Number of Women
Age											
20-24	14.7	6.7	21.4	0.0	0.0	0.0	14.7	6.7	21.4	0.0	412
25-29	6.2	6.1	12.3	45.8	0.3	46.1	52.0	6.4	58.5	78.9	1,508
30-34	1.4	4.4	5.8	69.9	1.2	71.1	71.3	5.6	76.9	92.5	1,719
35-39	0.3	2.9	3.2	85.6	1.2	86.8	85.9	4.1	90.0	96.4	1,739
40-44	0.2	3.8	4.0	89.8	3.5	93.3	90.0	7.6	97.3	95.8	2,234
45-49	0.4	7.6	8.0	84.6	4.4	89.0	85.0	11.9	96.9	91.8	2,014
Place of Residence											
Urban	1.8	4.9	6.7	74.6	2.5	77.1	76.4	7.4	83.8	92.0	5,540
Rural	2.4	5.1	7.5	73.9	1.8	75.7	76.3	6.9	83.2	91.0	4,086
Province											
Ryanggang	2.0	4.0	6.0	74.6	2.1	76.7	76.6	6.1	82.7	92.7	931
N. Hamgyong/ Rason	1.9	6.7	8.6	70.7	3.2	73.9	72.6	9.9	82.5	89.6	992
S. Hamgyong	1.2	5.4	6.6	74.1	4.5	78.6	75.3	9.9	85.2	92.3	1,151
Kangwon	2.5	4.9	7.4	72.6	2.6	75.2	75.1	7.5	82.6	91.0	994
Jagang	2.1	4.6	6.7	77.6	1.1	78.7	79.7	5.7	85.4	92.2	899
N. Phyongan	2.2	4.0	6.2	76.9	2.1	79.0	79.1	6.1	85.2	92.7	889
S. Phyongan/ Nampho	2.2	3.9	6.1	74.2	1.7	75.9	76.4	5.6	82.0	92.5	1,147
N. Hwanghae	2.9	4.1	7.0	75.8	1.4	77.2	78.7	5.5	84.2	91.7	873
S. Hwanghae	2.1	4.6	6.6	72.3	0.8	73.1	74.4	5.4	79.7	91.7	878
Pyongyang	1.5	6.9	8.4	75.5	1.6	77.1	77.0	8.5	85.5	90.2	872
Education											
Secondary senior	2.2	5.1	7.3	74.4	1.9	76.3	76.6	7.0	83.6	91.3	7,733
Vocational (< 3 yrs)	1.9	7.4	9.3	69.8	0.3	69.3	70.9	7.7	78.6	88.2	322
Post-Secondary (3yrs)	0.5	2.3	2.8	75.4	4.5	79.9	75.9	6.8	82.7	96.6	645
Tertiary +	1.5	5.3	6.8	75.1	3.2	78.3	76.6	8.5	85.1	92.0	926
Total	**2.0**	**5.0**	**7.0**	**74.3**	**2.2**	**76.5**	**76.3**	**7.2**	**83.5**	**91.6**	**9,626**

Unmet need decreases with age, from 21 percent for women aged 20-24 to three percent for women in the 35-39 age group, and thereafter increases to four and eight percent for 40-44 and 45-49 age groups respectively. Unmet need for spacing is obviously higher for younger women in comparison to older women. Although unmet need for limiting is the highest for the oldest age group, it is interesting that a substantially higher percentage of younger women wish to limit their family size. Unmet need, expectedly, is higher in urban areas

Figure 5.4: Met Need for Family Planning, SDHS-2014, DPRK
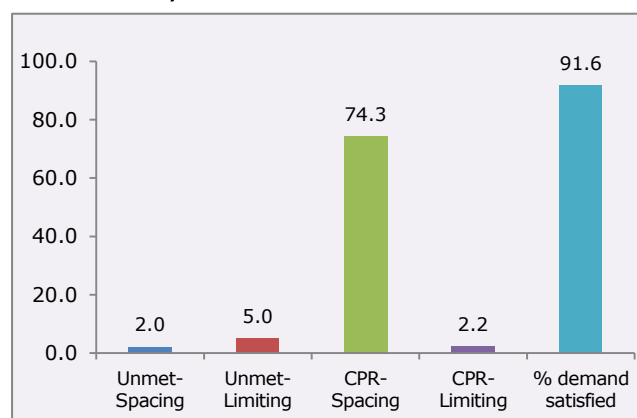
and it ranges from six to eight percent across provinces, it ranges from six to eight percent. Limiting need is the highest in Pyongyang. Concerning education, those with vocational education have the highest unmet need for limiting. Regarding the total demand and percentage of demand satisfied, it is high and over 90 percent across the various background categories.

However, mention has to be made about the 20-24 year age group where the demand satisfied is nil because none of them were currently using a method of contraception though 21 percent demand exists.

Contrasting our findings on contraceptive use, current use of limiting method is negligible, but there is higher unmet need for limiting than spacing methods. Given our understanding that there is over reliance on IUD--both from the providers and the acceptors--there is need to widen the contraceptive basket of choice for couples. Furthermore, the government will have to ensure trained providers and make available limiting methods at the health facilities. Moreover, promotional activities related to family planning have to be conducted and comprehensive knowledge of all modern methods has to be provided.

5.8. Abortion

The SDHS collected information on induced abortion from currently married women. Women were asked whether they had an abortion or not and, if yes, the number of abortions they had, how many months pregnant they were at the time of their last abortion and the reasons for undergoing abortion. All these questions are analyzed and presented in this section.

Examination of Table 5.10 reveals that around 11 percent of currently married women ever had an induced abortion. The percentage of women aged above 30 years reported of more abortions than women less than 30 years of age. More urban women availed themselves of abortion services than rural women.

In case of differentials by provinces, the least percentage of abortions was reported by North Hwanghae (5%) while the highest was in Pyongyang (13%). Women in provinces of South Hwanghae, North Phyongan, South and North Hamgyong and Ryanggang had more abortions than the national average. In case of education, there is no clear pattern, but abortion was found to be higher for women with post-secondary education and above in comparison to others. An overwhelming

Figure 5.5: Abortion by trimester of pregnancy, SDHS-2014, DPRK

majority of the currently married women (94%) reported that they underwent abortion during the first trimester of pregnancy (Figure 5.5).
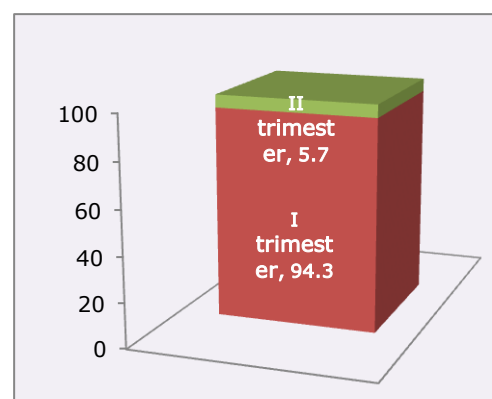
Table 5.10: Percent distribution of currently married women, 15-49 years by number of abortions ever had, according to background characteristics SDHS-2014, DPRK

Background Characteristics	Number of Abortions		
	One	Two or more	Total
Age			
<30 years	4.4	1.4	4.5
>30 years	9.0	2.7	11.7
Place of Residence			
Urban	8.8	2.3	11.1
Rural	7.0	2.7	9.7
Province			
Ryanggang	8.3	2.6	10.9
North Hamgyong / Rason	9.4	2.5	12.0
South Hamgyong	7.4	3.1	10.5
Kangwon	7.1	1.7	8.8
Jagang	8.0	1.8	9.9
North Phyongan	9.1	3.0	12.2
South Phyongan / Nampho	6.6	2.8	9.4
North Hwanghae	4.7	0.5	5.2
South Hwanghae	9.6	3.0	12.5
Pyongyang	10.3	2.3	12.6
Secondary senior	7.8	2.3	10.1
Vocational (< 3 yrs)	6.8	1.8	8.6
Post-Secondary (3yrs)	12.1	2.7	14.8
Tertiary +	8.1	3.9	12.1
Total	8.1	2.4	10.5

Women in urban and rural areas underwent abortion mainly because of the health reasons.   This was followed by did not want any more children, wanted to space births, socio-economic reasons, 'husband did not want' and risk of birth defects.   While the order of the first reason in the rural area is similar to the urban area, socio-economic reasons took precedence of other reasons.   What the analysis tends to show is that a proportion of women in the DPRK are using abortion as a substitute for family planning and is less related to risk of life of

Figure 5.6: Main Reason for Abortion by Place of Residence, SDHS-2014, DPRK
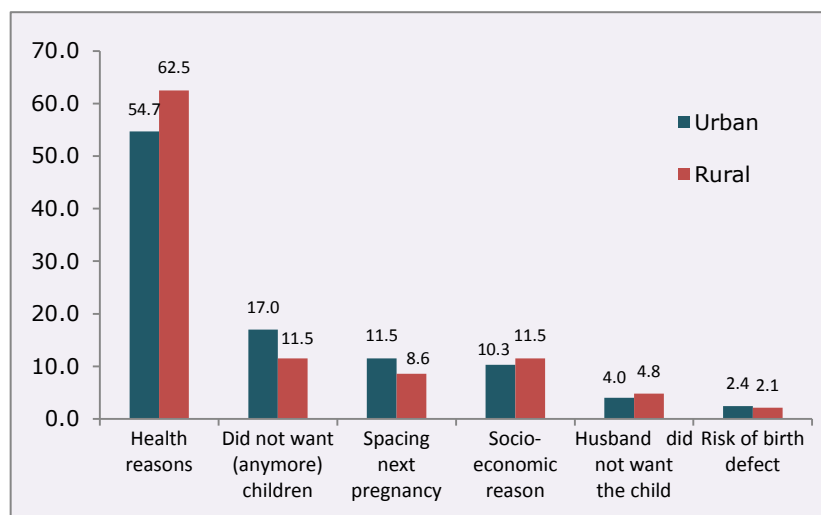
the mother or the child (Figure 5.6).   Service provision for limiting methods and expansion of the basket of contraceptive choices are a necessity, if abortion is being used as a family planning method.   Furthermore, there is a need to evolve appropriate communication strategies to educate both the providers and the potential clients.

CHAPTER 6. REPRODUCTIVE HEALTH

According to the WHO, maternal mortality is the second most important cause of death for women of reproductive age, after HIV/AIDS. Worldwide about 287,000 women die every year due to complications of pregnancy and childbirth[9]. Most of these deaths happen in developing countries and could have been prevented with appropriate reproductive health care during pregnancy, delivery and after childbirth. Additionally, millions of women suffer from debilitating diseases caused by lack of proper reproductive health care during pregnancy and childbirth. UNFPA estimates that for every maternal death, 20 or 30 women suffer complications during childbirth with serious or long-lasting consequences[10].

Evidence-based health policies and planning to reduce the level of maternal mortality and prevent pregnancy-related health problems need solid and reliable data. To provide information to the national policy makers, a number of questions on reproductive health were added to the SDHS-2014. These questions mainly deal with antenatal, delivery and postnatal care services. In this chapter we describe the various aspects of reproductive health and compare them with the RHS-2010 to examine changes in provision of reproductive health care services in the country.

6.1. Antenatal care

6.1.1 Coverage and service provisions of antenatal care

Table 6.1 presents the percent distribution of women aged 15-49 years who had a live birth in the three years preceding the survey by the type of provider of antenatal care (ANC) for the most recent birth and the percentage receiving antenatal care from a skilled provider.

The provision of antenatal care to pregnant women in the DPRK is universal and has remained the same since RHS-2010. The percentage seeking antenatal care

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[9] http://www.who.int/mediacentre/factsheets/fs334/en/

[10] http://www.unfpa.org/maternal-health

services from a doctor dropped from 89 percent in 2010 to 84 percent in 2014. As a result, the percentage seeking antenatal services from nurse/midwife has increased.

A small difference exists between urban and rural areas with more doctors providing antenatal care in urban areas (91%) compared to rural areas (74%). Although, in all provinces, the majority of pregnant women get an antenatal check-up from a doctor, it is seen that there are some clear differences (Figure 6.1).

Figure 6.1: Antenatal Care by Provider Type, SDHS-2014, DPRK
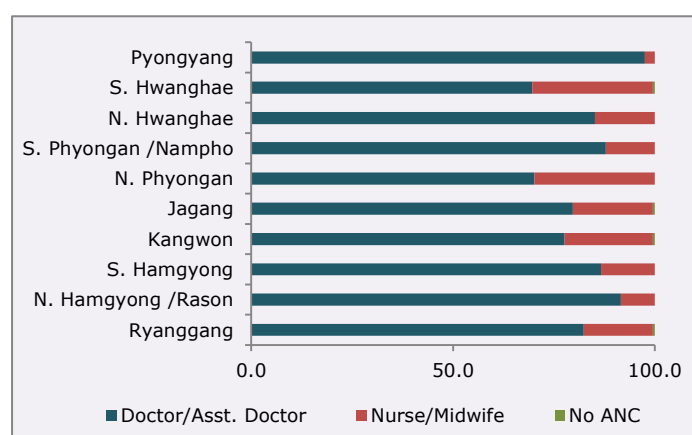
In Pyongyang almost all check-ups were performed by a doctor, while in South Hwanghae and North Phyongan, only seven out of ten women received antenatal care from a doctor or an assistant doctor. And the ratios in all other provinces were typically between 80 and 90 percent.

Table 6.1: Percent distribution of women 15-49 years who had a live birth in the three years preceding the survey by antenatal care (ANC) provider during pregnancy for the most recent birth and the percentage receiving antenatal care from a skilled provider for the most recent birth, according to background characteristics, SDHS-2014, DPRK

	Antenatal care provider		Percentage receiving ANC from a skilled provider	Total
	Doctor/Assistant doctor	Nurse/midwife		
Age of Mother				
<35	83.9	16.0	99.9	1,994
35 - 49	83.4*	16.6*	100.0	23
Birth Order				
1	83.5	16.4	99.9	980
2	84.5	15.4	99.9	912
3 and above	83.0	17.0*	100.0	124
Place of Residence				
Urban	91.1	8.9	100.0	1,127
Rural	73.6	26.1	99.7	889

Contd.

	Antenatal care provider		Percentage receiving ANC from a skilled provider	Total
	Doctor/Assistant doctor	Nurse/midwife		
Education				
Secondary senior	82.2	17.6	99.8	1,619
Vocational (< 3 yrs)	98.5	1.5*	100.0	84
Post-Secondary (3yrs)	94.6	5.4*	100.0	124
Tertiary+	85.3	14.7	100.0	189
Total	**83.9**	**16.0**	**99.9**	**2,016**

* Cell frequency<25 cases

6.1.2 Frequency of antenatal care and timing of first visit

The World Health Organization recommends that the first antenatal visit should take place in the first trimester of pregnancy, around or before the 12th week, and a minimum of four antenatal visits are recommended[11].

Table 6.2: Number of Antenatal Visits of women 15-49 years who had a live birth in the three years preceding the survey for the most recent birth, according to background characteristics, SDHS-2014, DPRK

Background Characteristics	Number of Antenatal Visits				Number
	1-4	5-9	10-16	Total	
Age of Mother					
<35	8.1	19.5	72.4	100.0	1,993
35 - 49	9.9*	11.6*	78.6*	100.0	23
Birth Order					
1	7.8	19.7	72.5	100.0	980
2	8.6	19.0	72.4	100.0	912
3+	7.8*	20.3	71.9	100.0	124
Place of Residence					
Urban	7.3	15.1	77.6	100.0	1,127
Rural	9.4	25.6	65.0	100.0	889
Education					
Secondary senior	8.9	19.5	71.6	100.0	1,619
Vocational (< 3 yrs)	7.4*	13.9*	78.7	100.0	84
Post-Secondary (3yrs)	5.6*	29.2	65.2	100.0	124
Tertiary+	3.5*	15.5	81.0	100.0	189
Total	**8.2**	**19.4**	**72.4**	**100.0**	**2,016**

* Cell frequency < 25 cases; Note: Insignificant number did not avail ANC services

[11] World Health Organization (2002), WHO Antenatal Care Randomized Trial. Manual for the Implementation of the New Model. UNDP/UNFPA/WHO/World Bank. Special Program of Research, Development and Research Training in Human Reproduction. Department of Reproductive Health and Research, Family and Community Health. Geneva 2002.

Table 6.2 shows that an overwhelming majority of pregnant women (92%) in the DPRK comply with the WHO recommendations. There is evidence that pregnant women in the DPRK have far more antenatal check-ups than is strictly necessary, as more than 72 percent of them had 10-16 ANC check-ups. Younger women below 35 years of age are more likely to have ANCs than their older counterparts. Hardly any differentials are seen according to educational attainment or birth order, but urban women are likely to have more ANCs than rural women. Regarding the timing of ANC visits, 82 percent had their first ANC check-up during the first trimester of their pregnancy in 2010 while it is 85 percent in 2014. Along the expected lines, higher percentage of younger women and those in urban areas had their first check-up in the first trimester (Figure 6.2).

Figure 6.2: Percentage women having first check-up in the first trimester, DPRK
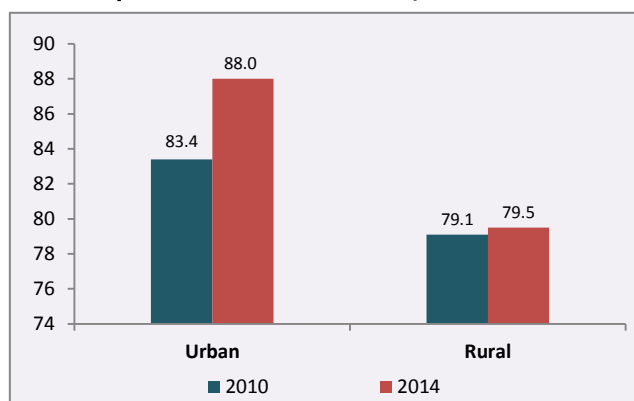
6.1.3. Type of services during antenatal visit

Complications of pregnancy can affect both the mother's and the baby's health. Health problems a woman may experience during pregnancy include: anaemia, urinary tract infections, hypertension, gestational diabetes mellitus, overweight and obesity, infections and specific mental health conditions. Some of these health conditions may lead to serious complications, jeopardizing the life of both the mother and the child. For instance, hypertension may lead to eclampsia, a life threatening condition where the woman develops convulsions often followed by coma. To prevent complications during pregnancy certain tests have to be performed during the antenatal visits. Also during the antenatal visit the caretaker should inform the expectant mother about possible complications and good practices, e.g. in terms of nutrition and food supplements. To measure the services provided during the antenatal visits, questions were asked in the SDHS-2014 whether, at least once, specific tests were performed and whether advice was given as part of the antenatal visits. To avoid problems with memory lapse, these questions were restricted to women who had given birth during the last three years before the survey.

Figure 6.3: Services provided during Antenatal Care, SDHS-2014, DPRK
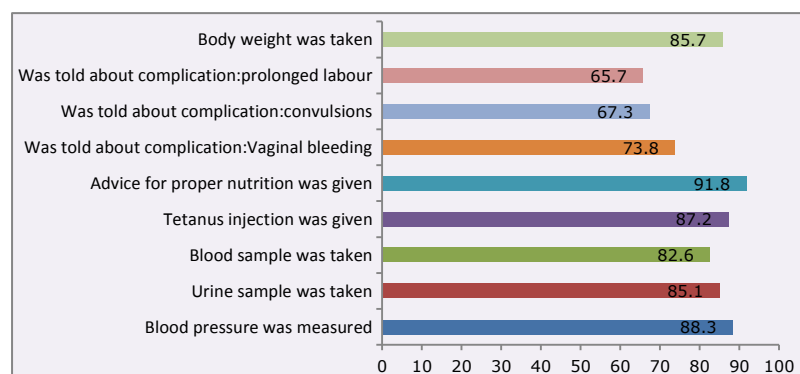
Figure 6.3 shows that in general, the majority of women received the most important antenatal services at least once during their visits. However, it is to be noted that not all the required tests were conducted for all pregnant women and they were restricted to only complicated cases.

- Blood pressure: As hypertension is connected to some serious health risks during pregnancy, it is essential that blood pressure should be measured during the visit. Nine out of ten women reported that their blood pressure was measured. The percentage undergoing the test is higher in urban areas (92%) than in rural areas (83%).

- Urine sample: Urine tests during pregnancy are important to detect higher levels of sugar (gestational diabetes) or protein (urinary tract infection, pre-eclampsia). Although all pregnant women should have their urine tested, 15 percent reported they never had a urine sample taken. Urban percentages are considerably higher than rural percentages.

- Blood sample: Blood tests should be routine during antenatal care. Before birth it is essential to determine among others the blood group and the rhesus factor of the mother and to check for iron deficiency. About 17 percent of women indicated there was never a blood sample taking during their antenatal visits.

- Tetanus injection[12]: According to the WHO, globally tetanus kills an estimated 180,000 neonates a year and up to 30 000 young mothers. To be fully protected against the disease all women should be immunized with the tetanus toxoid vaccine. Although the large majority of pregnant women in the

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[12] Department of Making Pregnancy Safer, World Health Organization (2006), Standards for Maternal and Neonatal Care. Maternal immunization against tetanus. Integrated Management Of Pregnancy And Childbirth (IMPAC), p. 3.

DPRK are immunized during pregnancy, the coverage is far from universal. Figure 6.4 show that 87 percent women received a tetanus injection during pregnancy.

- Body weight: The measurement of body weight during the prenatal visits follows the same pattern as most other services. About 86 percent of women had their body weight taken at least once during antenatal consultation.

- Information provided: Compared to the technical services given to prevent pregnancy complications, the provision of information to the pregnant women is less obvious. The majority of women seem to be getting proper advice about eating well during pregnancy (92%), but far less information is provided about health risks during pregnancy and delivery. Only one third of women were informed about complications of prolonged labour, 67 percent were explained about convulsions and 74 percent about the risks of vaginal bleeding.

6.1.4. Degree of satisfaction with antenatal care

Respondents in the survey were satisfied with the antenatal services they had received. About 30 percent indicated they were highly satisfied with the antenatal care services and the remaining were satisfied. Due to small samples at provinces, it is difficult to infer. However, the indications are that residents of Pyongyang had a higher degree of satisfaction, as 54 percent of women felt so while the satisfaction rate is only 18 percent in Ryanggang.

6.2. Delivery care

An important aspect of safeguarding the health of mothers and new-born children is that delivery takes place under the supervision of health professionals in a hygienic, well equipped health facility. Proper medical attention in an appropriate environment reduces the risk of complications after delivery for both mother and child. The presence of qualified medical personnel may make the difference between life and death substantial in case of a medical emergency during or after delivery. To examine the conditions under which deliveries take place, questions were included in the SDHS-2014 on the type of person(s) who assisted during delivery and the place where the delivery took place.

6.2.1. Place of delivery

A large majority of women in the DPRK delivered in hospitals (Figure 6.4). Most women delivered their children in ri hospitals (38%). County/district hospitals were almost equally popular (36%), while provincial and central hospitals were far less used (6% and 11% respectively). A total of nine percent of all women delivered at home.

Figure 6.4: Place of Delivery, DPRK
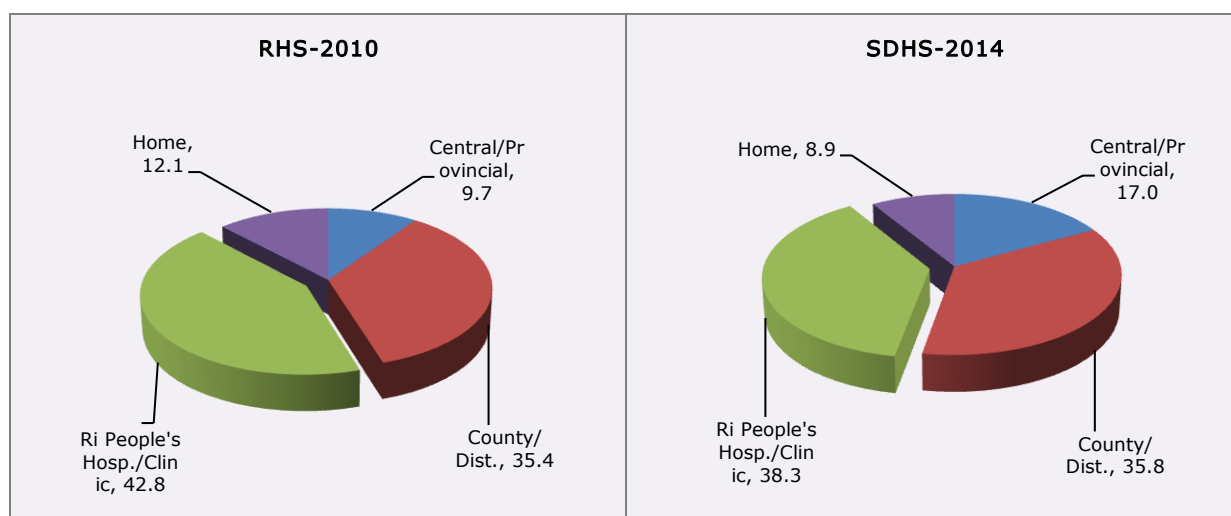
The decision to deliver at home is closely linked to the number of antenatal visits the woman has received. If a woman had less than four visits for antenatal care then her chance of delivering at home was somewhat higher than women who had more than four visits (12% as against 9%). More home deliveries are observed among rural women than their urban counterparts. Obviously women gave birth in the facility that is closest to their residence and that can be reached most easily. Therefore, it should not come as a surprise that many more urban than rural women gave birth in a county/district hospital or central hospital (61%) and that more rural women delivered in a ri hospital or clinic (56%).

Significant differences exist between the provinces. The highest percentage of home deliveries took place in Ryanggang (23%) and the lowest in Pyongyang (2%). In both Kangwon and Jagang provinces, 15 percent of women delivered at home. Because of good access, women in Pyongyang (63%) delivered in central hospitals, while in the other provinces; women normally gave birth in either the county/district hospitals or ri hospitals or clinics.

Compared to the RHS-2010 small changes are seen. First, the number of deliveries at home declined slightly from 12 percent to 9 percent; also the share of ri hospitals came down from 43 percent to 38 percent while the use of central or provincial hospitals increased. Currently, 17 percent of women give birth in central or provincial hospitals, as against 10 percent in 2010[13]. The MICS-2009 reported that only six percent of women delivered their babies at home[14]. However, the questions were asked to a smaller group of women (854) than in the SDHS-2014 (2,016), which perhaps may have led to small sample variability.

6.2.2. Type of assistance during delivery

Obstetric care during childbirth by a professional provider is critical for the prevention of maternal and neonatal mortality. Table 6.3 shows that in the DPRK assistance during childbirth is almost universal and is provided by professionally trained personnel. No less than 99.9 percent of mothers are attended to by either a doctor, doctor's assistant, a midwife or a nurse at the time of delivery. This information is in line with the MICS-2009 and the RHS-2010. In the MICS-2009, all deliveries were attended to by skilled persons and while the delivery with such attendance was 97 percent in the RHS-2010.

Thus, in terms of skilled birth attendance there is hardly any difference, but differences exist in the type of trained personnel that assisted the delivery. For instance, 94 percent of urban women were assisted by a doctor/asst. doctor at the time of delivery while three quarters of rural counterparts received skilled assistance. Likewise, differentials are seen across the provinces. In Pyongyang, 96 percent of the deliveries were assisted by a doctor/asst. doctor whereas delivery with professional assistance was 78 and 80 percent in North Phyongan and Jagang respectively. Birth order or education attainment did not display major differentials although there are slight variations. In general, women who had more antenatal consultations are more likely to be assisted by a doctor/asst. doctor.

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[13] Central Bureau of Statistics, DPRK (2012), Democratic People's Republic of Korea, 2010 RH Survey Report. Pyongyang, August, Juche 101 (2012), p.41.

[14] Central Bureau of Statistics, UNICEF (2010), DPR Korea Multiple Indicator Cluster Survey 2009, Final Report, CBS, Pyongyang, DPR Korea, 2010, p.33.

6.2.3. Postnatal Complications

The conditions during which birth takes place can have a direct effect on postnatal complications. Due to small sample size only a summary is highlighted. The analysis reveals that 95 percent of all deliveries in the DPRK took place without any serious postnatal complications. In other words, one in every 20 mothers was confronted with a complication after birth. The most important complications following birth were infection, inflammation of the breasts and abnormal high blood loss. Women who received less antenatal care had more postnatal complications and this observation holds true for rural women as well. In Pyongyang, only one in 40 women was confronted with a complication after birth, while in South Hwanghae this ratio is almost one in ten. Four percent of young mothers in this province indicated they had an 'other' complication than the pre-coded categories and three percent complained they had a postpartum depression.

Table 6.3: Percent distribution of live births in the three years preceding the survey by person providing assistance during delivery, percentage of births assisted by a skilled provider, according to background characteristics, SDHS-2014, DPRK

Background Characteristics	Person providing assistance during delivery					
	Doctor/ Asst. Doctor	Nurse/ midwife	Relative/ Friend*	Total	Percentage delivered by a skilled provider	Total number of women
Mother's Age at Birth of Child						
<35	86.2	13.7	0.1	100.0	99.9	1,993
35 - 49	93.7*	6.3*	0.0	100.0	100.0	23
Birth Order						
1	87.3	12.6	0.1	100.0	99.9	980
2	85.6	14.3	0.0	100.0	100.0	912
3+	83.2	16.8*	0.0	100.0	100.0	124
ANC visits						
<=4	78.5	20.6	0.9	100.0	99.1	188
5-9	77.7	22.3	0.0	100.0	100.0	400
10+	89.4	10.6	0.0	100.0	100.0	1,428
Residence						
Urban	94.4	5.6	0.0	100.0	100.0	1,127
Rural	74.6	25.2	0.1	100.0	99.9	889

Contd.

Background Characteristics	Person providing assistance during delivery					
	Doctor/ Asst. Doctor	Nurse/ midwife	Relative/ Friend*	Total	Percentage delivered by a skilled provider	Total number of women
Province						
Ryanggang	84.3	15.3	0.5	100.0	99.5	217
N. Hamgyong/Rason	89.2	10.8*	0.0	100.0	100.0	169
S. Hamgyong	84.9	15.1	0.0	100.0	100.0	235
Kangwon	87.1	12.5	0.5	100.0	99.5	215
Jagang	79.9	19.6	0.5	100.0	99.5	202
N.Phyongan	81.6	18.4	0.0	100.0	100.0	175
S.Phyongan/Nampho	87.9	12.1	0.0	100.0	100.0	249
N. Hwanghae	87.1	12.9*	0.0	100.0	100.0	180
S. Hwanghae	78.2	21.8	0.0	100.0	100.0	195
Pyongyang	95.9	4.1*	0.0	100.0	100.0	179
Education						
Secondary senior	85.4	14.5	0.1	100.0	99.9	1,619
Vocational (< 3 yrs)	88.4	11.6*	0.0	100.0	100.0	84
Post-Secondary (3yrs)	92.2	7.8*	0.0	100.0	100.0	124
Tertiary+	88.9	11.1*	0.0	100.0	100.0	189
Total	**86.3**	**13.7**	**0.1***	**100.0**	**99.9**	**2,016**

Cell frequency <25 cases

6.2.4. Degree of satisfaction with delivery care

The reported degree of satisfaction with delivery care closely followed the pattern of degree of satisfaction of antenatal care. Of all 2,016 respondents, 69.5 percent of women indicated satisfaction with the service they received during delivery and 29.9 percent indicated high level of satisfaction. Again, more people in Pyongyang were highly satisfied than in any province.

6.3. Postnatal care

6.3.1. Timing of first check-up after childbirth

It is crucial that after birth a medically trained person checks on the young mother and child. The sooner the control takes place, the sooner the possible problems and complications can be detected and treated. WHO recommendations on number and timing of postnatal care are as follows: 'If birth is in a health facility, mothers and newborns should receive postnatal care in the facility for at least 24 hours after birth. If birth is at home, the first

postnatal contact should be as early as possible within 24 hours of birth. At least three additional postnatal contacts are recommended for all mothers and newborns, on day 3 (48-72 hours), between days 7 and 14 after birth, and six weeks after birth'[15]. The first 48 hours are crucial for the safety of the mother and the newborn, as a large proportion of maternal and neonatal deaths occur within this time span. Therefore safe motherhood programmes emphasize the importance that a check-up of the mother and the newborn is done within two days after childbirth.

In the SDHS-2014, a question was asked about the timing of the first check-up after delivery. The results of this question are presented in Table 6.4. After childbirth all 2,016 women who delivered during the three years preceding the survey received a postnatal check-up; 87 percent of women received their postnatal check-up within two days after birth, seven percent of women within 3-6 days after birth and five percent later than one week after childbirth.

Differentials by background characteristics are not prominent; however, one observation is that women who had received less antenatal care services had received more postnatal care within four hours of childbirth, but as the days advanced, it evened out. Differentials exist between the various provinces in the country. Mothers who reside in Pyongyang scored best, with 96 percent being checked within the first two days. The province that scored most poorly is South Hwanghae, where almost one in every five mother was not being checked within two days after childbirth. Here, about eight percent of women were not attended to during the first week after child birth. The information on the timing of the first postnatal check-up is consistent with the one provided in the RHS-2010. In 2010, 78 percent of women were checked within the first 24 hours after delivery (76% in 2014) and 16% between days 2 and 7 (18% in 2014) and six percent after the first week (5% in 2014).

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[15] WHO (2013), WHO recommendations on postnatal care of the mother and newborn. Geneva, p.3.

Table 6.4: Percent distribution of women 15-49 years giving birth in the three years preceding the survey, who received a postnatal checkup, according to background characteristics, SDHS-2014, DPRK

Background Characteristics	Time after delivery of mother's first postnatal checkup							Total number of women
	Less than 4 hours	4-23 hours	1-2 days	3-6 days	7-41 days	Don't know/ missing*	Total	
Mother's Age at Birth of Child								
20 - 34	54.5	21.8	11.0	6.5	5.0	1.1	100.0	1,993
35 - 49	52.2*	14.0*	11.0*	19.7*	0.0*	3.0	100.0	23
Birth Order								
1	56.4	20.4	11.6	5.7	5.0	0.9	100.0	980
2	51.9	24.0	10.2	7.2	5.4	1.3	100.0	912
3+	59.9	15.1*	12.5*	9.4*	2.0*	1.1	100.0	124
ANC visits								
<4	62.6	18.0	4.8*	8.0*	6.0*	0.6	100.0	188
5-9	55.5	18.4	13.4	5.7*	4.5*	2.6	100.0	400
10+	53.3	23.1	11.0	6.7	5.0	0.8	100.0	1,428
Residence								
Urban	55.9	25.2	8.5	5.8	3.9	0.7	100.0	1,127
Rural	52.5	16.7	14.6	7.9	6.5	1.8	100.0	889
Province								
Ryanggang	57.0	18.5	7.9*	10.2*	5.6*	0.9	100.0	217
N. Hamgyong/ Rason	54.9	28.0	2.4*	5.3*	7.7*	1.8	100.0	169
S. Hamgyong	50.2	26.5	12.6	4.7*	3.0*	3.0	100.0	235
Kangwon	57.9	23.6	9.0*	3.8*	4.7*	0.9	100.0	215
Jagang	54.2	22.2	10.6*	10.0*	3.0*	0.0	100.0	202
N. Phyongan	67.0	11.3*	10.3*	9.8*	1.1*	0.6	100.0	175
S. Phyongan/ Nampho	55.3	12.4	17.0	6.1*	9.1*	0.0	100.0	249
N. Hwanghae	55.2	17.4	13.0*	7.0*	4.0*	3.4	100.0	180
S. Hwanghae	50.6	20.7	8.2*	11.7*	7.7*	1.0	100.0	195
Pyongyang	47.4	38.2	10.2*	2.3*	2.0*	0.0	100.0	179
Education								
Secondary senior	54.1	20.7	11.8	7.4	4.9	1.1	100.0	1,619
Vocational (< 3 yrs)	51.1	13.3*	10.0*	13.0*	12.6*	0.0	100.0	84
Post-Secondary (3yrs)	44.9	31.8	13.0*	1.8*	8.2*	0.3	100.0	124
Tertiary+	65.1	27.9	3.6*	1.0*	0.5*	2.0	100.0	189
Total	**54.5**	**21.7**	**11.0**	**6.6**	**5.0**	**1.1**	**100.0**	**2,016**

* Cell frequency <25 cases

6.3.2. Type of health-provider providing postnatal check-up

More than three out of four women received their postnatal check-up from a doctor or assistant doctor; while the others from a midwife or a nurse.

Table 6.5: Percent distribution of women in the three years preceding the survey by person who did receive post-natal checkup by type of health provider according to background characteristics, SDHS-2014, DPRK

Background Characteristics	Type of Health Provider of Mother's First Postnatal Checkup				
	Doctor/ Asst. Doctor	Nurse/ Midwife	Other*	Total	Total Number of Women
Mother's Age at Birth of Child					
20 - 34	77.4	22.1	0.5	100.0	1,993
35 - 49	79.5*	20.5*	0.0	100.0	23
Birth Order					
1	78.5	20.9	0.6	100.0	980
2	76.0	23.6	0.4	100.0	912
3+	80.8	19.2	0.0	100.0	124
ANC visits					
<4	70.1	29.3	0.6	100.0	188
5-9	66.7	33.0	0.3	100.0	400
10+	81.2	18.3	0.5	100.0	1,428
Residence					
Urban	86.7	13.2	0.0	0.1	1,127
Rural	64.3	34.8	0.0	1.0	889
Province					
Ryanggang	78.7	20.8	0.0	0.5	217
N. Hamgyong/Rason	85.7	14.3*	0.0	0.0	169
S. Hamgyong	79.1	20.4	0.0	0.5	235
Kangwon	78.4	19.8	0.0	1.9	215
Jagang	73.9	24.6	0.0	1.5	202
N.Phyongan	73.0	27.0	0.0	0.0	175
S.Phyongan/Nampho	72.5	27.3	0.0	0.2	249
N. Hwanghae	78.5	20.4	0.0	1.1	180
S. Hwanghae	61.9	37.6	0.0	0.5	195
Pyongyang	93.1	6.9*	0.0	0.0	179
Education					
Secondary senior	76.3	23.1	0.6	100.0	1,619
Vocational (< 3yrs)	62.2	37.8	0.0	100.0	84
Post-Secondary (3yrs)	86.8	13.2*	0.0	100.0	124
Tertiary+	87.9	12.1*	0.0	100.0	189
Total	**77.5**	**22.1**	**0.5**	**100.0**	**2,016**

Cell frequency <25 cases

Check-up was made by a doctor for 87 percent of urban cases as against 64 percent for rural women. As observed earlier, in case of antenatal and delivery care services, more women in Pyongyang used postnatal services provided by a doctor/asst. doctor while the use of them was the least in South Hwanghae. Women who had the lowest educational attainment (secondary senior) also had the lowest percentage of postnatal check-up performed by a doctor, while 87 percent of women with post-secondary or tertiary and above education were checked by a doctor/asst. doctor (Table 6.5). In regard to quality of postnatal services, almost all the women were satisfied. Exceptionally, women in urban areas, lower birth order women and those who used more antenatal services--residing in Pyongyang and with tertiary and above education--expressed high level of satisfaction in comparison to their counterparts.

6.4. Other reproductive health services

6.4.1. Iron and Folic Acid tablets (IFA)/micro nutrient tablets and vitamin A supplementation

Daily oral iron and folic acid supplementation is strongly recommended by the WHO as part of antenatal care. The combination of iron and folic acid helps to reduce the risk of low birth weight, maternal anaemia and iron deficiency. Pregnant women are advised to take 30–60 mg of elemental iron and 0.4 mg of folic acid daily [16]. The recommendation by WHO indicates that IFA supplementation should be on a daily basis, should be provided as early as possible and should continue throughout pregnancy [17]. Therefore pregnant women should use the supplements at least for six months until the end of their pregnancy.

The use of vitamin A is considered beneficial for women during pregnancy and after childbirth, but it is not really an official recommendation by WHO. *'Only in settings where there is a severe public health problem related to vitamin A deficiency (prevalence of night blindness is 5% or higher in pregnant women or*

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[16] WHO (2012), Guideline: Daily iron and folic acid supplementation in pregnant women. Geneva, World Health Organization.

[17] WHO (2012), Guideline: Daily iron and folic acid supplementation in pregnant women. Geneva, World Health Organization, p. 5.

5% or higher in children 24–59 months of age), vitamin A supplementation during pregnancy is recommended for the prevention of night blindness'. [18]

Table 6.6 shows that the intake of folic acid and iron pills is far from universal among pregnant women in the DPRK. About one in four women did not take any iron or folic acid supplementation during pregnancy. Expectedly, more urban women than rural counterparts took IFA supplementation and its use was 80 percent for urban women as against 70 percent for rural women. The percentage point difference in IFA use during pregnancy is more than 20 points. Pyongyang reported the highest IFA consumption (88%) and Jagang the least (68%). Pregnant women who availed antenatal check-ups more than four times had slightly higher levels than other women who had less antenatal check-ups (77% vs 71%). One would expect significant difference between lower and higher educational levels, but the differences are minimal.

Table 6.6: Percent distribution of women 15-49 years giving birth in the three years preceding the survey, who took Vitamin A tablets two months after birth and Iron and Folic Acid tablets (IFA)/ micro nutrient tablets during pregnancy, according to background characteristics, SDHS-2014, DPRK

Background Characteristics	Vitamin A tablets in the second month after birth	Iron and Folic Acid tablets(IFA)/micro nutrient	Total Number of Women
Mother's Age at birth of child			
20 – 34	55.3	76.5	1,993
35 – 49	29.0*	70.3*	23
Birth Order			
1	54.0	75.0	980
2	55.2	77.1	912
3+	61.6	82.7	124
ANC visits			
<4	38.0	68.2	188
5-9	56.3	68.7	400
10+	56.6	79.4	1,428
Residence			
Urban	59.8	80.8	1,127
Rural	48.2	70.2	889

Contd.

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[18] http://www.who.int/elena/titles/full_recommendations/vitamina_supp/en/

Background Characteristics	Vitamin A tablets in the second month after birth	Iron and Folic Acid tablets(IFA)/micro nutrient	Total Number of Women
Province			
Ryanggang	40.5	70.0	217
N. Hamgyong/Rason	43.5	74.4	169
S. Hamgyong	62.1	72.3	235
Kangwon	48.6	69.4	215
Jagang	52.0	67.9	202
N. Phyongan	45.1	69.7	175
S. Phyongan/Nampho	59.3	83.2	249
N. Hwanghae	47.2	74.7	180
S. Hwanghae	48.5	76.5	195
Pyongyang	76.0	88.2	179
Education			
Secondary senior	52.7	75.6	1,619
Vocational (< 3yrs)	51.5	79.9	84
Post-Secondary (3yrs)	62.6	79.8	124
Tertiary+	70.7	80.2	189
Total	**55.0**	**76.4**	**2,016**

Cell frequency <25 cases

Regarding the duration of consumption of IFA supplement, it is found that 44 percent consumed IFA for about four months, 32 percent for 5-6 months and the remaining one fourth did not consume at all. Differentials by background characteristics are pertinent and it is seen that younger women, lower birth order women and those who availed ANC services for more than four times are more likely to have consumed for 5-6 months than others.

Figure 6.5: Duration of IFA Consumption by selected background characteristics, SDHS-2014, DPRK
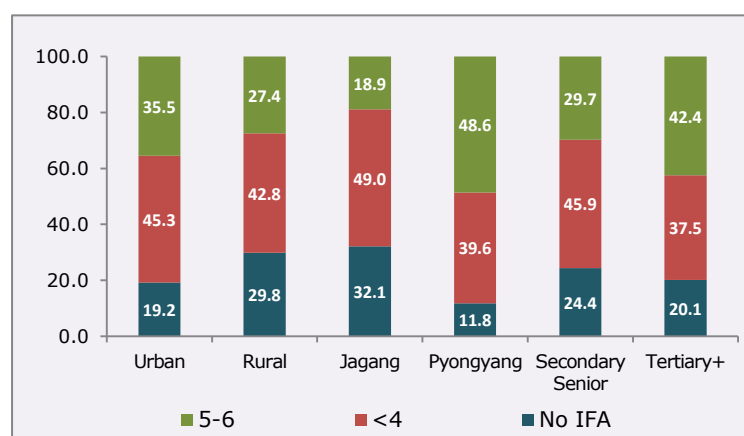
Figure 6.5 displays that the duration of consumption of IFA is higher in urban areas in comparison to rural areas. The extent of variation between provinces is substantial with only 19 percent of women consuming IFA tablets for 5-6 months while that rate is 49 percent in Pyongyang. Education differentials also

exist and 30 percent of women with secondary school education consumed for 5-6 months as against 42 percent in case of tertiary+ educated women. Even though the consumption percentages are better, it is far from universalization. If one were to calculate complete package of ANC services by including IFA tablets consumption for 5-6 months, 1-2 TT injections and four or more ANC check-ups, it seems that full ANC coverage in the DPRK will drop down significantly.

On the other hand, Table 6.6 reveals that only 55 percent of women took vitamin A supplementation two months after giving birth to a child. The higher the education of the women, the higher the percentage of her taking vitamin A supplementation is. Again large differences exist between the various provinces. While three out of four women in Pyongyang took vitamin A, only four out of ten did so in Ryanggang. Vitamin A supplementation was lower than 50 percent in five other provinces: North Hamgyong, Kangwon, North Phyongan, North Hwanghae and South Hwanghae. Women who had visited the antenatal clinics more frequently (4+ times) had a significantly higher intake of vitamin A (56%) compared to women who visited the clinics less frequently (41%).

6.4.2. Newborn care

The effects of duration of breastfeeding on levels of mortality and morbidity of infants and young children are well documented. The World Health Organization recommends exclusive breastfeeding for the first six months of life, followed by breastfeeding with additional healthy foods for up to two years or longer[19].

Table 6.7: Percent distribution of women 15-49 years that gave birth in the three years preceding the survey, by breastfeeding of child, according to background characteristics, SDHS-2014, DPRK

Background Characteristics	Exclusive breastfeeding					Total
	Not breastfed	0-2 months	3-4 months	5-6 months	Still breastfeeding	
Mother's Age at birth of child						
20-34	1.3	1.4	28.4	54.9	14.0	1,993
35+	1.7*	0.0*	6.4*	81.7*	10.2*	23
Birth Order						
1	1.8*	1.6*	28.9	52.4	15.4	980
2	1.0*	1.2*	28.0	57.8	12.0	912
3+	0.3*	1.5*	23.8	55.9	18.6*	124

Contd.

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[19] WHO (2003), Global strategy for infant and young child feeding, Geneva, p.7.

Background Characteristics	Exclusive breastfeeding					Total
	Not breastfed	0-2 months	3-4 months	5-6 months	Still breastfeeding	
Place of Residence						
Urban	1.7*	1.2*	27.9	55.1	14.2	1,127
Rural	0.7*	1.6*	28.6	55.3	13.8	889
Province						
Ryanggang	1.4*	0.9*	28.7	56.1	12.8*	217
N. Hamgyong/Rason	1.2*	2.4*	33.1	47.3	16.0	169
S. Hamgyong	0.5*	0.2*	25.9	61.9	11.5	235
Kangwon	1.9*	1.9*	26.6	51.5	18.1	215
Jagang	0.0*	1.5*	29.8	51.4	17.3	202
N. Phyongan	2.3*	0.0*	24.5	56.6	16.5	175
S. Phyongan/Nampho	1.1*	1.2*	35.5	51.5	10.7	249
N. Hwanghae	1.2*	1.1*	23.6	62.4	11.7*	180
S. Hwanghae	2.1*	0.5*	22.1	59.4	15.9	195
Pyongyang	1.3*	4.0*	27.5	52.7	14.5	179
Education						
Secondary senior	1.6	0.9*	26.1	56.7	14.7	1,619
Vocational (< 3yrs)	0.0*	0.0*	35.6	57.0	7.4*	84
Post-Secondary (3yrs)	0.6*	4.0*	21.5	57.6	16.3*	124
Tertiary+	0.0*	4.1*	46.1	40.5	9.3*	189
Total	**1.3**	**1.4**	**28.2**	**55.1**	**14.0**	**2,016**

Cell frequency <25 cases

Table 6.7 shows that generally exclusive breastfeeding is quite far-reaching. Among all women who gave birth three years preceding the survey, 55 percent breastfed the child for 5-6 months and 28 percent breastfed for 3-4 months and 14 percent are still breastfeeding. Only a very small proportion of women did never breastfeed their baby (1.3%) or breastfed for less than three months (1.4%). Throughout the chapter on reproductive health we saw that women in rural areas generally had poorer scores than urban women. However, in the case of exclusive breastfeeding both groups of women followed exactly a similar pattern. Furthermore, women with tertiary education or above tended to do exclusive breastfeeding for shorter duration: only 40 percent indicated that they breastfed for 5-6 months as against the national average of 55 percent. Likewise provincial differences are apparent and with Pyongyang having more educated population, exclusive breastfeeding for 5-6 months was lower than many provinces. The results from MICS, 2009[20] or NNS,2012[21] cannot be compared

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[20] Multiple Indicator Cluster Survey, 2009, CBS and UNICEF, 2010

[21] National Nutrition Survey, 2012, ICN, CBS, WFP, UNICEF and WHO, March 2013

with SDHS-2014 due to difference in methodology of estimation. However, the observation that one could infer from the three studies is that the level of exclusive breastfeeding for 5-6 months is high, yet it is far from universalization. Hence, it is necessary to make efforts for communication and improvement of interpersonal counselling skills of providers to promote exclusive breastfeeding.

One of the other recommendations WHO and UNICEF have made to enable mothers to establish an exclusive breastfeeding pattern for six months is that initiation of breastfeeding should be within the first hour after birth[22]. To examine the pattern of initiation of breastfeeding, a question was asked in the SDHS-2014 to all women who had a child in the last 36 months, 'when did they first put their newborn babies to the breast?'

Table 6.8 shows that only one in three women put the newborn baby to the breast within an hour of birth, 15 percent between 1 and 11 hours; 24 percent between 12 and 23 hours and the remaining 29 percent after 24 hours. In other words, compliance with the WHO and UNICEF recommendations is low. More women in urban areas fed their newborn within an hour than their rural counterparts. Moreover, large differences existed between the different provinces. For instance 45 percent of mothers in Jagang put their newborn to the breast within one hour after birth while the rate is only 18 percent in South Hwanghae. However, with so many provinces and duration categories, it is very well possible that some small sample variability is involved. Regarding education, a consistent pattern did not emerge, but nearly half of women with vocational education initiated breastfeeding within an hour as against 29 percent for women with secondary senior education. Thus, in sum, there is a need to promote both exclusive breastfeeding and its initiation within an hour after birth in the country despite the fact that the initiation that was 18 percent in MICS, 2009 increased to 28 percent in NNS, 2012 and to 31 percent in SDHS-2014.

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[22] http://www.who.int/maternal_child_adolescent/topics/child/nutrition/breastfeeding/en/

Table 6.8: Percent distribution of women 15-49 years that gave birth in the three years preceding the survey, by initiation of breastfeeding, according to background characteristics, SDHS-2014, DPRK

	Never	<1 hr	1-11 hrs	12-23 hrs	>=24 hrs	Total
Mother's Age at birth of child						
20-34	1.3	30.8	14.7	24.0	29.2	1,993
35+	1.7*	20.6*	12.8*	18.7*	46.2*	23
Birth Order						
1	1.8*	28.9	12.8	25.8	30.7	980
2	1.0*	32.2	15.4	23.1	28.4	912
3+	0.3*	32.2	24.6	16.8*	26.1	124
Place of Residence						
Urban	1.7*	33.1	14.1	23.6	27.5	1,127
Rural	0.7*	27.2	15.6	24.5	32.0	889
Province						
Ryanggang	1.4*	31.3	21.2	25.0	21.2	217
N. Hamgyong	1.2*	32.5	15.3*	19.5	31.5	169
S. Hamgyong	0.5*	27.1	10.5*	38.3	23.6	235
Kangwon	1.9*	28.5	13.9	15.8	40.0	215
Jagang	0.0*	44.6	12.4	19.8	23.2	202
N. Phyongan	2.3*	26.8	22.7	24.1	24.1	175
S. Phyongan/Nampho	1.1*	38.8	11.5*	23.5	25.1	249
N. Hwanghae	1.2*	25.3	8.6*	29.1	35.9	180
S. Hwanghae	2.1*	17.9	13.9	29.3	36.8	195
Pyongyang	1.3*	32.9	20.8	11.5	33.4	179
Education						
Secondary senior	1.6	29.3	13.7	25.6	29.9	1,619
Vocational (< 3yrs)	0.0*	47.7	20.6*	13.9*	17.8*	84
Post-Secondary (3yrs)	0.6*	29.8	20.4*	31.5	17.7*	124
Tertiary+	0.0*	35.6	17.1*	10.4*	36.8	189
Total	**1.3**	**30.7**	**14.7**	**24.0**	**29.4**	**2,016**

Cell frequency <25 cases

CHAPTER 7. MORTALITY

According to the 1993 population census, life expectancy in the DPRK was 73.2 years for both sexes. Fifteen years later, with the Census 2008, people in the DPRK could expect to live a total of 69.3 years, implying an average loss of life of almost four years. The drop in life expectancy during the period 1993-2008 was accompanied by an increase in infant mortality. During the inter-censal period the infant mortality rate rose from a level of 13.9 per thousand to 19.3 per thousand[23]. The 2014 SDHS provides an opportunity to check whether this downward trend has continued or whether this negative development has reversed.

In the following sections we examine the current levels of mortality and explore whether improvements were made in terms of infant and child mortality and overall life expectancy.

7.1. Crude death rates

The crude death rate is simply the number of deaths occurring during the year, per 1,000 population estimated at midyear. The difference between the crude death rate and the crude birth rate gives the rate of natural increase. At the moment, the crude death rate for the DPRK equals 8.4 per thousand. As we saw in Chapter 4, the crude birth equals 14.0 per thousand. This implies that currently the annual rate of natural increase is equal to 5.6 per thousand. In the case of the DPRK, where international migration is negligible, the rate of natural increase equals the overall growth rate.

Table 7.1 presents the crude death rates for the 2014 SDHS by sex, together with the censuses of 1993 and 2008. When there was a clear increase in the crude death rates for both sexes between 1993 and 2008, we see that in the last six years there was a slight decrease from 9.0 per thousand for both sexes to 8.4. The decrease is a bit more pronounced for males than for females.

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[23] Central Bureau of Statistics (s.d.), The Population of the Democratic People's Republic of Korea: An Analysis of Data from the 2008 Census, Pyongyang, p.29.

Table 7.1: Crude Death Rate by Sex, 1993-2014, DPRK

Year	Both Sexes	Male	Female
1993	5.7	6.5	5.0
2008	9.0	10.8	8.5
2014	8.4	8.9	7.8

The crude death rate is a poor indicator of mortality, as it is strongly influenced by changes in age composition of the population. Two populations with the same mortality regime could have very different crude death rates, if one of them is for instance much older than the other. A more accurate picture of the pattern of mortality is given by the construction of a life table, which describes the mortality experience of a population for each age.

7.2. Life tables 2014 DPRK

The life table presents the experience of a fictive cohort of people (called the life table population), normally by sex, in terms of their mortality if they would be subject to the mortality conditions in the country at a specific moment in time[24]. In our life table the fictive population was set at 100,000 persons. The life table provides the following age-specific mortality indicators:

- $m(x,n)$ is the age-specific mortality rate which is defined as the number of deaths in age group x to x+n, divided by the mid-year population in age group x to x+n.

- $q(x,n)$ is the age-specific probability of dying between ages x and x+n.

- $l(x)$ is the function of survival, or the number of survivors in the life table at exact age x, out of an initial population of 100000 at age 0.

- $D(x,n)$ is the function of death, or the number of deaths in the life table between ages x and x+n.

- $L(x,n)$ is the total number of person-years lived by the total population between ages x and x+n in the life table

- $S(x,n)$ is the survival rate, or the probability of surviving between two groups of completed years. This survival rate is necessary for the construction of demographic projection models.

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[24] For an introduction of life table techniques see for instance:
Preston, S. H., Heuveline, P., & Guillot, M. (2001). Demography: Measuring and Modeling. Population Processes. Oxford: Blackwell Publishing Ltd.

- T(x) is the 'total after lifetime', or the total number of person-years lived by the cohort after exact age x.

- e(x) is the expectation of life, or life expectancy representing the average after lifetime at exact age x. e(0) is the first of the series of e(x) values and indicates the life expectancy of the population at birth.

The life table was constructed using the number of deaths by age and sex from the civil registration system, together with the weighted total population by age and sex from the 2014 SDHS. Life tables were constructed separately for males and females and for both sexes combined. The life tables show currently, life expectancy at birth is 68.2 years for males and 75.6 years for females. Life expectancy for both sexes equals 72.1 years. As can be seen, the difference in number of years of life expectancy between males and females is quite high (7.4 years). In 1993 the difference between male and female life expectancy was even higher than it is today. Globally, in 2012 newly born girls could expect to live 73 years and newly born boys 68 years[25], showing a five year difference. The difference between male and female mortality in the DPRK stays elevated throughout the life course. For instance, at age 50 women on average can look forward to an additional 30.0 years of life, while males can expect to live only an additional 23.3 years.

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[25] http://www.who.int/mediacentre/news/releases/2014/world-health-statistics-2014/en/

Table 7.2a: Life Table DPRK Males, 2014

Age	Deaths	Pop.	M(x,n)	q(x,n)	l(x)	D(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	2,554	165,301	0.01545	0.01524	100,000	1,524	98,857	0.97655	6,816,009	68.2
1	1,070	700,137	0.00153	0.00609	98,476	600	392,706	0.99331	6,717,152	68.2
5	779	857,789	0.00091	0.00453	97,877	443	488,274	0.99582	6,324,446	64.6
10	709	924,154	0.00077	0.00383	97,433	373	486,233	0.99514	5,836,172	59.9
15	1,177	996,888	0.00118	0.00589	97,060	571	483,872	0.99302	5,349,939	55.1
20	1,812	1,116,392	0.00162	0.00808	96,489	780	480,494	0.99056	4,866,066	50.4
25	2,017	927,894	0.00217	0.01081	95,709	1,035	475,958	0.98853	4,385,572	45.8
30	2,168	888,257	0.00244	0.01213	94,674	1,148	470,501	0.98690	3,909,614	41.3
35	2,475	872,139	0.00284	0.01409	93,526	1,318	464,336	0.98485	3,439,113	36.8
40	3,658	1,118,239	0.00327	0.01622	92,208	1,496	457,301	0.98082	2,974,777	32.3
45	4,458	993,752	0.00449	0.02218	90,712	2,012	448,531	0.97288	2,517,476	27.8
50	4,877	745,869	0.00654	0.03217	88,700	2,853	436,368	0.95400	2,068,945	23.3
55	7,861	632,178	0.01243	0.06030	85,847	5,177	416,293	0.90561	1,632,577	19.0
60	11,697	418,363	0.02796	0.13066	80,670	10,541	377,001	0.83428	1,216,284	15.1
65	19,334	420,817	0.04594	0.20605	70,130	14,450	314,523	0.75424	839,283	12.0
70	19,397	279,422	0.06942	0.29576	55,679	16,468	237,227	0.65073	524,760	9.4
75	15,127	140,047	0.10801	0.42524	39,212	16,674	154,372	0.86260	287,533	7.3
80+	7,873	46,518	0.16925		22,537	22,537	133,161		133,161	5.9

Table 7.2b: Life Table DPRK Females, 2014

Age	Deaths	Pop.	M(x,n)	q(x,n)	l(x)	D(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	2,340	154,551	0.01514	0.01493	100,000.00	1,493.49	98,880	0.97774	7,555,758	75.6
1	934	672,978	0.00139	0.00553	98,506.51	545.03	392,936	0.99401	7,456,878	75.7
5	625	814,490	0.00077	0.00383	97,961.48	375.13	488,870	0.99616	7,063,942	72.1
10	669	867,792	0.00077	0.00385	97,586.35	375.43	486,993	0.99591	6,575,072	67.4
15	837	961,763	0.00087	0.00434	97,210.92	422.08	484,999	0.99491	6,088,079	62.6
20	1,138	970,988	0.00117	0.00584	96,788.83	565.53	482,530	0.99374	5,603,080	57.9
25	1,198	894,043	0.00134	0.00668	96,223.31	642.53	479,510	0.99315	5,120,549	53.2
30	1,243	882,335	0.00141	0.00702	95,580.77	670.89	476,227	0.99261	4,641,039	48.6
35	1,323	848,530	0.00156	0.00777	94,909.88	737.03	472,707	0.99127	4,164,812	43.9
40	2,163	1,109,291	0.00195	0.00970	94,172.85	913.68	468,580	0.98867	3,692,106	39.2
45	2,650	1,013,897	0.00261	0.01298	93,259.17	1,210.84	463,269	0.98444	3,223,526	34.6
50	2,926	798,077	0.00367	0.01817	92,048.33	1,672.06	456,062	0.97506	2,760,257	30.0
55	4,335	669,950	0.00647	0.03184	90,376.27	2,877.41	444,688	0.95093	2,304,195	25.5
60	6,456	466,662	0.01383	0.06686	87,498.86	5,850.15	422,869	0.92360	1,859,507	21.3
65	9,931	548,409	0.01811	0.08662	81,648.71	7,072.59	390,562	0.88900	1,436,638	17.6
70	14,287	483,061	0.02958	0.13770	74,576.13	10,269.02	347,208	0.81260	1,046,076	14.0
75	19,550	350,042	0.05585	0.24504	64,307.10	15,757.73	282,141	1.47702	698,868	10.9
80+	27,140	232,958	0.11650		48,549.38	48,549.38	416,727		416,727	8.6

Table 7.2c: Life Table DPRK Both Sexes, 2014

Age	Deaths	Pop.	M(x,n)	q(x,n)	l(x)	D(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	4,894	319,852	0.01530	0.01509	100,000	1,509	98,868	0.97713	7,206,762	72.1
1	2,004	1,373,115	0.00146	0.00582	98,491	573	392,818	0.99365	7,107,894	72.2
5	1,404	1,672,279	0.00084	0.00419	97,918	410	488,564	0.99599	6,715,076	68.6
10	1,378	1,791,946	0.00077	0.00384	97,508	374	486,603	0.99552	6,226,512	63.9
15	2,014	1,958,651	0.00103	0.00513	97,134	498	484,423	0.99392	5,739,908	59.1
20	2,950	2,087,380	0.00141	0.00704	96,635	680	481,476	0.99209	5,255,485	54.4
25	3,215	1,821,937	0.00176	0.00878	95,955	843	477,668	0.99082	4,774,009	49.8
30	3,411	1,770,592	0.00193	0.00959	95,112	912	473,281	0.98972	4,296,341	45.2
35	3,798	1,720,670	0.00221	0.01098	94,200	1,034	468,417	0.98803	3,823,060	40.6
40	5,821	2,227,529	0.00261	0.01298	93,166	1,209	462,809	0.98475	3,354,643	36.0
45	7,108	2,007,649	0.00354	0.01755	91,957	1,614	455,751	0.97878	2,891,834	31.4
50	7,803	1,543,946	0.00505	0.02495	90,343	2,254	446,081	0.96477	2,436,083	27.0
55	12,196	1,302,128	0.00937	0.04576	88,089	4,031	430,368	0.92895	1,990,002	22.6
60	18,153	885,025	0.02051	0.09755	84,058	8,200	399,790	0.88213	1,559,634	18.6
65	29,265	969,227	0.03019	0.14037	75,858	10,649	352,668	0.83256	1,159,844	15.3
70	33,684	762,483	0.04418	0.19892	65,209	12,971	293,619	0.75585	807,176	12.4
75	34,677	490,088	0.07076	0.30061	52,238	15,703	221,933	1.31402	513,557	9.8
80+	35,013	279,476	0.12528		36,535	36,535	291,624		291,624	8.0

Figure 7.1: Comparison of Age Specific Probabilities of Dying for Males and Females, SDHS-2014, DPRK
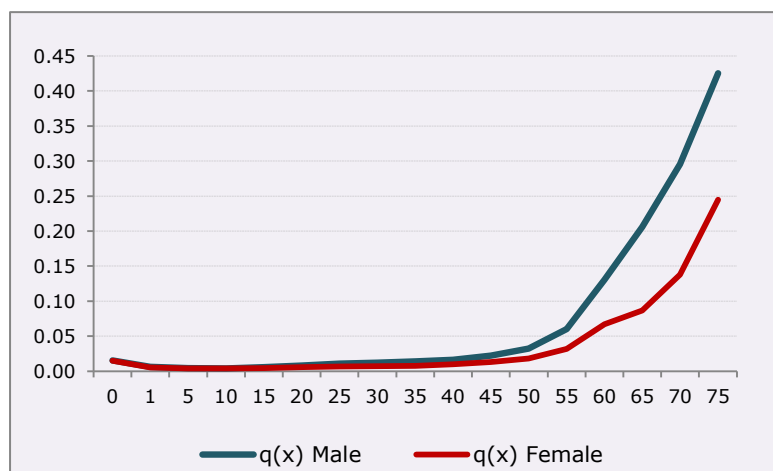
In fact, with the exception of the age group of 10-14 years, the probabilities of dying for all age categories are consistently higher for males than for females. Figure 7.1 clearly shows that the differences between probabilities for both sexes grow much wider as age advances. Another way to look at age-specific differentials in probability to die is to look at the ratio between both probabilities (Figure 7.2.). The figure clearly shows the disadvantage of men compared to women in terms of survivorship as they grow older. After age 20 for each age category, men have higher odds of dying than women before they reach the next five-year age category. Between ages 65 and 75 men even have twice the probability to die within the five-year age group than women. An interesting research question is why

Figure 7.2: Ratio between age specific probabilities for dying for males compared to females, SDHS-2014, DPRK
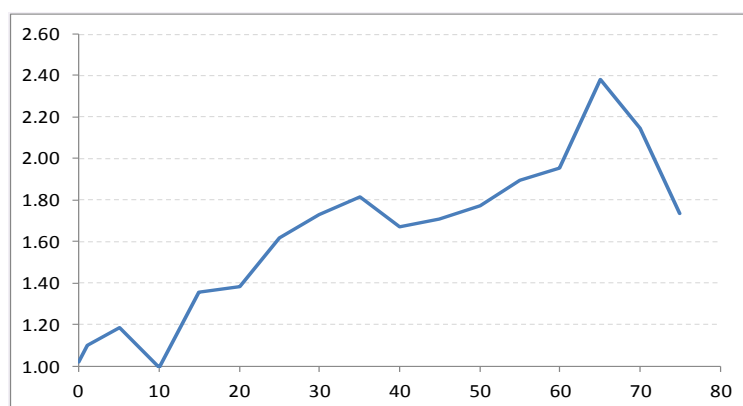
the difference between male and female life expectancy is so high. One probable culprit could be the high percentage of men who smoke against the almost total lack of female smokers. The sex differential in death rates is certainly a terrain which would need more attention in future health research.

The results from the 2014 SDHS show that the decrease in life expectancy between the censuses of 1993 and 2008 has been reversed and again there has been an increase in it in the last six years. Currently, life expectancy is again

approaching the level of 1993. The trend can be observed for both males and females: males have almost the same level as in 1993, while women still fall about 1.2 years short of the former level.

Table 7.3: Life Expectancy by Sex, 1993-2014, DPRK

Year	Both Sexes	Male	Female
1993	73.2	68.4	76.8
2008	69.3	65.6	72.7
2014	72.1	68.2	75.6

In comparison to other countries in Asia, the DPRK ranks about in the middle of the group in terms of life expectancy. Figure 7.3 shows the life expectancies for both sexes for a number of Asian countries. Life expectancies in the graph refer to the year 2013 and are derived from the World Bank open statistical data source[26]. The country with the highest life expectancy in Asia (and actually the world) is Japan. At birth its citizens may look forward to living for 83.3 years. A number of countries in Asia still have life expectancies well below 70 years of age. The country with the lowest value is Afghanistan, where people can expect to live for only 60.9 years on average.

Figure 7.3: Asian countries by Life Expectancy for Both Sexes
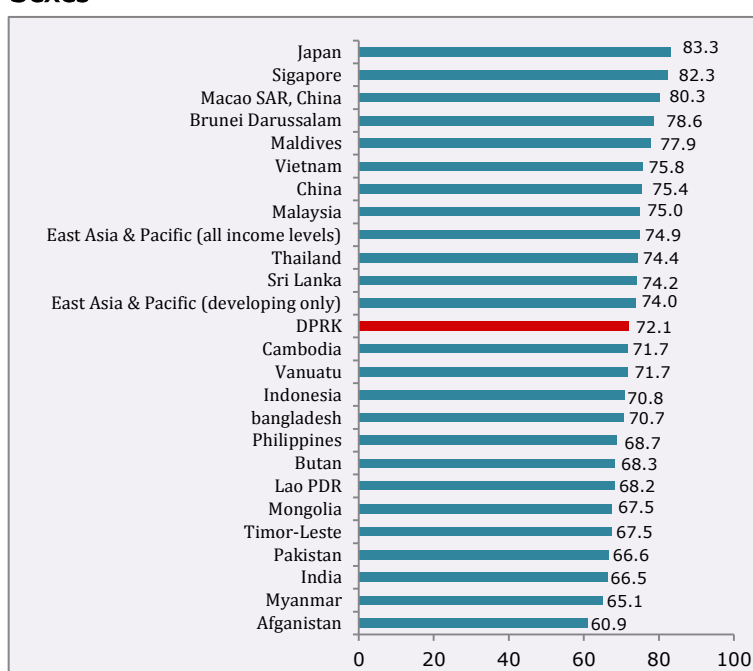
7.3. Infant and Child Mortality

Infant and child mortality rates constitute important indicators for the health position of children in a country and provide an indication of the overall

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[26] Data derived from the World Bank website: http://data.worldbank.org/indicator/SP.

DYN.LE00.IN/countries.

development level of a country. The most important indicator for the level of mortality at early live is infant mortality rate (IMR). The IMR is the probability (expressed per 1,000 live births) of a child born in a specific year dying before its first birthday if subject to current age-specific mortality conditions in the country. It is important that the IMR refers to live births[27].

In 2014 in the DPRK, a total of 4,894 infants died and 344,435 children were born according to the country's civil registration. This implies an infant mortality rate of 14.2 per thousand. In the 2014 SDHS a full birth history was recorded for every ever-married woman in the age group of 15-49 years. Among other information, for each child the date of birth was noted and, if the child died, the date of death. On the basis of this information, infant mortality rates could be calculated referring to the periods 0-4, 5-9 and 10-14 years before the survey. These IMRs are presented in Table 7.4. The table shows that the IMR for the period 0-4 years before the survey comes very close to the IMR calculated from the civil registration data (13.7 as against 14.2 per thousand resulting in a difference of 0.5 points).

Table 7.4: Neonatal, Post-neonatal, infant, child, and under-five mortality rates for five year periods preceding the survey, SDHS-2014, DPRK

Years preceding the Survey	Neonatal Mortality (NN)	Post Neonatal Mortality (PNN)	Infant Mortality Rate (IMR)	Child Mortality Rate (CMR)	Under-5 Mortality Rate (U5MR)
0-4	4.7	9.0	13.7	2.5	16.2
5-9	5.0	10.7	15.7	6.3	21.9
10-14	6.0	11.8	17.8	6.4	24.1

There is good reason to believe that the IMR has come down in recent years. According to 2010 Reproductive Health Survey, the infant mortality rate was equal to 17.7 per thousand[28], while the 2008 Population Census showed a level of 19.3 per thousand. Also the data from the 2014 SDHS indicate that over the

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[27] According to the UN definition: *'A live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life--such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles--whether or not the umbilical cord has been cut or the placenta is attached. Each product of such a birth is considered a live birth'.* http://mdgs.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0 *& Series Id=562*

[28] Central Bureau of Statistics, 2012, Democratic People's Republic of Korea, 2010 RH Survey Report. Pyongyang, August, Juche 101 (2012), p. 19.

last 15 years infant mortality dropped. Infant mortality rates in the periods 5-9 (15.7 per thousand) and 10-14 years (17.8 per thousand) before the survey are just slightly lower than the data from the 2010 RH Survey and the 2008 census.

Another important indicator of mortality at the beginning of life is the child mortality rate (1-4 years of age). The child mortality rate is the probability of dying between the child's first birthday and exactly four years of age, again expressed per 1,000 live births. It is most often calculated as the number of children who died between exact ages 1 and 4 in a given year, divided by the number of births in that year. Table 7.4 shows that the current level of the child mortality rate (1-4 years) is 2.5 per thousand. During the periods 5-9 and 10-14 years ago, the child mortality rates (1-4 years) from the SDHS were respectively 6.3 and 6.4 per thousand. On the basis of the infant and child mortality rates, it is easy to calculate the under-5 mortality rate, which in 2014 stood at 16.2 per thousand in the period 0-4 years before the survey, against 21.9 per thousand 5-9 years ago and 24.1 per thousand 10-14 years ago.

The neonatal mortality, i.e. the rate at which children born alive die during the first month (27 days) of life, stood at 4.7 per thousand births in 2010-2014. Post-neonatal mortality was measured to be 9.0 per thousand for the same reference period. Both neonatal and post-neonatal mortality saw some decline in the three 5-year periods before the survey.

7.4. Maternal Mortality

The 2008 population census reported a total of 267 deaths during the year before the enumeration. After the census, the Central Bureau of Statistics initiated a Maternal Mortality Validation Study in which all reported maternal deaths were triangulated with data from the health care registration system. Out of the 267 pregnancy-related deaths reported in the census, 241 could be withheld as true maternal deaths[29]. It was also found in the health care registration system that the census failed to report 66 maternal deaths. However, further analysis showed that 13 out of these 66 reported deaths could

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[29] A maternal death is defined as: *The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.*

http://www.who.int/healthinfo/statistics/indmaternalmortality/en/.

not be retained as maternal deaths. Given the actual number of 294 (241+53) maternal deaths and 345,630 live births, the maternal mortality ratio (MMR) was 85.1 per 100,000 live births. The MMR is equal to the number of maternal deaths in a given period per 100,000 live births in that period.

The general conclusion of the validation was that the health registration system had a better reporting of maternal deaths than the census. When the census showed an underreporting of 20 percent of maternal deaths, the registration only missed 5 percent. Of course, it is possible that the underreporting in both systems is somewhat higher as there may have been cases that were both missed in the census and the registration system[30].

According to the health registration system, 216 maternal deaths took place in 2014 and 344,435 children were born. If we assume that in 2014 the health registration system had the same underreporting as the census then we can estimate the number of maternal deaths to be 227. This would result in a maternal mortality ratio of 65.9 per 100,000 live births. Compared to 2008, this would imply a reduction in MMR of 23 percent during the period 2008-2014.

Another important measure of maternal mortality is the Maternal Mortality Rate. The MM Rate is in fact a cause-specific mortality rate. It is defined as the number of maternal deaths in a period per 1,000 person-years lived by the female population aged 15 to 49. According to the 2014 SDHS, the weighted number of women was equal to 6,640,568. The MM Rate for DPRK was therefore 0.0342 per 1,000 women in the age group of 15-49 years.

Another way to look at the risk of maternal mortality is to look at a woman's risk of dying from a maternal cause from age 15 onwards. Several ways have been suggested to calculate the life time risk of a maternal cause (LTR). In our calculation we took over the method given in Tom Moultrie et al. (2013)[31]:

$$LTR = (T_{15} - T_{50}) / l_{15} \times MM\ Rate$$

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[30] Central Bureau of Statistics and Population Centre (2012), Democratic People's Republic of Korea Maternal Mortality Validation Study 2009. Pyongyang, October, Juche 101 (2012), p14.

[31] Moultrie TA, RE Dorrington, AG Hill, K Hill, IM Timæus and B Zaba (eds). 2013. Tools for Demographic Estimation. Paris: International Union for the Scientific Study of Population., p. 325.

where T_{15} and T_{50} are the person-years lived above ages 15 and 50 respectively, and I_{15} is the survivors to age 15 for females in the life table. The values for T_{15}, T_{50} and I_{15} simply can be taken from the female life table presented in Section 7.2. The Life Time Risk of death from a maternal cause was found to be 1.17 per thousand, or 1 in every 855.3.

In 2014, the WHO in collaboration with UNICEF, UNFPA, The World Bank and the United Nations Population Division made national and regional estimates for the prevalence of maternal mortality[32]. According to their estimate, the MMR for the whole world currently stands at 210 maternal deaths per 100,000 live births. Among the developed countries the MMR is 12 per 100,000, while it is 230 in developing countries. For East Asia, the MMR is 33 per 100,000 live births. Compared to other Asian regions, East Asia has fared better. South Asia, South East Asia, West Asia and Central Asia score respectively 190, 170, 140, and 74. Globally, Sub-Sahara Africa has the highest regional MMR (510 per 100,000). Sierra Leone was estimated to have the highest MMR in the world (1,100), with another 15 countries with very high levels, all in Sub-Sahara Africa. The estimates for the DPRK are the ones still based on the 2008 Population Census (85.1 per 100,000), with a life time risk of around 1 in 643. Our analysis shows that both measures have improved in recent years.

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[32] Trends in maternal mortality: 1990 to 2013. Estimates by WHO, UNICEF, UNFPA, The World Bank and the United Nations Population Division, Geneva.

CHAPTER 8. POPULATION AGEING: SELF-PERCEIVED HEALTH STATUS OF ELDERLY

For some time the country has been experiencing ageing of the population and the proportion of elderly population (60+ years) to the total population has been increasing. Realising the importance of population ageing, the Census 2008 came up with a thematic report on Elderly Population in the DPRK. The thematic report covered the basic aspects of their proportion to the population; where they live; what type of household they are residing in; and what have been their family type, their educational attainment and the economic activities they are engaged in. Although, the available information is useful in devising policies and strategies for their welfare, information on health is the single most important determinant of quality of life of the elderly and also an important component of the Madrid International Plan of Action on Ageing (MIPAA, 2002)[33].

It is a known fact that the health status of the elderly is determined by a host of economic, social, psychological and physiological factors. With advancing age, ill health becomes a major hindrance to the well-being of the elderly. Therefore, not only physical but also perceived health is an important predictor for their living happily (Kivinen et al., 1998)[34]. A number of studies have found that at the population level, the general health status self-rated by the elderly is a valid measure of their health status (Krause and Jay, 1994)[35]. The self-rating of health is influenced largely by physical health conditions like chronic diseases, functional disability, sensory performance, the number of sick days, etc.

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[33] United Nations (2002). Report of the Second World Assembly on Ageing, Madrid, 8-12 April 2002. United Nations, New York, 2002.

[34] Kivinen, P., P. Halonen, M. Eronen and A. Nissinen (1998). 'Self-rated health, physician-rated health and associated factors among elderly men: the Finnish cohorts of the Seven Countries Study'. *Age and Ageing* Vol. 27, P: 41-47.

[35] Krause, Neal M. and Gina M. Jay (1994). 'What Do Global Self-rated Health Items Measure?', M*edical Care* Vol. 32, No. 9, P: 930-42.

Moreover, not only the objective health condition but also psychological and social factors influence the self-rating of health (Jang et al., 2004)[36].

Hence, it was decided to include a module in the SDHS on self-perceived health status, functionality and locomotor disability for elderly persons. Several researchers around the globe have successfully attempted to approximate the health status by developing a set of questions related to activities of daily living (ADL). This standardised instrument was used in the SDHS-2014 and the results are discussed in this chapter.

8.1. Self-Reported Health of Elderly

The self-rated health is considered as a strong predictor to understand the health status of people in general and the elderly in particular. The self-rated health was assessed in the survey using three different measures. The SDHS asked all the elderly respondents to rate their current health status on a five-point scale (i) excellent, (ii) very good, (iii) good, (iv) fair and (v) poor. In addition, the respondents were asked to rate their health in comparison to the previous year as well as to other people of the same age. Table 8.1 presents the percentage distribution of the elderly by self-rated health status by background characteristics.

The survey found that seven percent of the elderly rated their current health as excellent, 19 percent as very good and 39 percent as good. However, 14 percent of the elderly considered their current health as poor and another 21 percent as fair, constituting slightly over a third of them. Thus, self-rated health of the elderly is relatively good. In general, self-rated health is better among elderly men than among elderly women. Similarly, self-rated current health has been found to be better among urban elderly than among rural elderly.

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[36] Jang, Y., L.W. Poon, S.W. Kim and B. Shin (2004). 'Self-perception of aging and health among older adults in Korea'. *Journal of Aging Studies* Vol. 18, P: 485–96.

Table 8.1: Percentage distribution of persons 60 years and older by self-reported health, SDHS-2014, DPRK

	Men			Women			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Self-rated health									
Excellent	9.1	7.1	8.3	7.1	5.7	6.6	7.9	6.2	7.2
Very good	20.9	22.0	21.4	17.9	17.4	17.7	19.1	19.2	19.1
Good	38.8	37.4	38.2	39.6	38.8	39.3	39.3	38.3	38.9
Fair	17.1	18.2	17.5	22.1	23.9	22.8	20.2	21.7	20.8
Poor	14.2	15.2	14.6	13.2	14.2	13.6	13.6	14.6	14.0
Current health compared to one year before									
Better	4.7	4.5	4.6	4.0	3.4	3.8	4.3	3.8	4.1
Same	64.2	63.9	64.1	62.4	60.0	61.4	63.1	61.5	62.5
Worse	30.2	30.4	30.3	32.1	35.6	33.5	31.4	33.6	32.3
Don't Know	0.9	1.2	1.0	1.5	1.0	1.3	1.3	1.1	1.2
Current health compared to people of their own age									
Better	18.6	15.8	17.5	15.4	13.6	14.7	16.6	14.4	15.8
Same	59.2	61.6	60.2	61.3	61.6	61.4	60.5	61.6	60.9
Worse	19.6	21.7	20.5	20.2	22.1	21.0	20.0	21.9	20.8
Don't Know	2.5	0.9	1.9	3.1	2.7	2.9	2.9	2.0	2.5
Total	1,640	1,097	2,737	2,693	1,721	4,414	4,333	2,818	7,151

About a third of all elderly surveyed reported that their health had worsened over the last year. More women than men felt so; and it is found to be more pronounced among rural women than among their urban counterparts. The study also observed that about 63 percent reported that their current health status was the same in comparison to the previous year and an equal percent felt it is the same as their peers. This shows that for a majority of the elderly in the country, the health status remained nearly the same in the last one year or in comparison with their peers. It can therefore, in general, be inferred that the self-rated health in the country has been rather good. At the same time, there is a need to understand the profile of those reporting that their health worsened in the past year or in comparison to their peers. Such an analysis has been attempted in Table 8.2.

Table 8.2 presents the three measures of self-rated health by background characteristics. As can be expected, all three dimensions of self-rated health worsened with increasing age. Only 38 percent of the elderly in the age group of 80 and above rated their current health as excellent, very good and good as against around 77 percent in the age group of 60-64 years. The widowed and those with lower levels of education considered their health status as poor or worse as compared to their counterparts.

There are also wide province-level variations observed with regard to self-rated health. Self-rated health appears to be better in South Phyongan and Pyongyang. At the lower end, a larger proportion of the elderly in Ryanggang and Kangwon rated their health as poor or worse.

Table 8.2: Percentage of Elderly by Self-rated Health According to Select Background Characteristics, SDHS-2014, DPRK

	Self-Rated Health	Health Status in Comparison to last year	Health Status in comparison to other persons of their age	Total 60+
	Excellent/Very Good/Good	Better/Same	Better/Same	
Age of Elderly				
60-64	76.6	75.0	79.7	1,867
65-69	69.0	68.3	77.9	2,012
70-74	62.5	63.9	76.0	1,615
75-79	57.4	60.7	74.5	1,054
80+	38.4	51.9	69.5	603
Sex				
Men	67.9	68.7	77.7	2,737
Women	63.6	65.2	76.1	4,414
Place of Residence				
Urban	66.2	67.3	77.1	4,333
Rural	63.7	65.4	76.1	2,818
Province				
Ryanggang	57.9	55.3	69.3	719
N. Hamgyong / Rason	61.3	59.4	72.8	643
S. Hamgyong	65.6	66.7	77.5	889
Kangwon	58.1	61.1	69.5	718
Jagang	60.5	62.1	72.4	655
N. Phyongan	66.4	72.5	79.1	647
S. Phyongan / Nampho	70.7	71.5	79.0	861
N. Hwanghae	64.1	64.2	78.1	661
S. Hwanghae	65.2	65.6	76.1	696
Pyongyang	67.6	69.6	80.2	662
Marital Status				
Married	71.3	69.6	79.9	4,210
Widowed and others	56.3	62.2	72.1	2,941
Education				
None/Pre-School	32.0	50.9	75.0	63
Primary to Vocational <(3 yrs)	65.2	67.3	77.2	6,198
Post-Secondary & above	68.0	9.0	74.0	890
Total 60+	**65.2**	**66.6**	**76.7**	**7,151**

More women and rural elderly rated their health as poor in comparison to men and their urban counterparts respectively. A majority of the elderly reported that their current health status is more or less the same as that of their peer groups as well as in comparison with their health status one year earlier. Moreover, there is also a significant social gradient in self-rated health with the widowed and less educated rating their health much worse than their counterparts, clearly bringing out the close link between social status and self-rated health in the country.

8.2. Functionality

The notion of functionality among the elderly involves the ability to perform self-care, self-maintenance and physical activity. To explain the pathways characterising the disablement process, the WHO proposed a theoretical framework in 1980 named as the **International Classification of Impairments, Disabilities and Handicaps (ICIDH)**. The ICIDH was subsequently revised in 2001 into an **International Classification of Functioning, Disability and Health (ICF)**, which focuses on components of health as human functioning instead of considering disability as a consequence of disease or ageing alone. Under the ICF-- which has its theoretical underpinnings in social models of disability-- physical functioning and disability are considered outcomes of interactions between health conditions and contextual factors.

The Activities of Daily Living (ADL) is an umbrella term relating to self-care, comprising those activities that people undertake routinely in their everyday life. The activities can be subdivided into personal care or ADL and domestic and community activities or Instrumental ADL (IADL). The ADL and IADL have emerged as the most common approaches in empirical assessments of functionality among the elderly and are considered to be befitting to the ICF framework. However, in the current SDHS survey, questions were restricted to capturing ADL elements.

8.2.1. Activities of Daily Living

The 'activities of daily living' or ADLs are the basic tasks of everyday life, such as feeding, bathing, dressing, toileting, mobility (i.e., getting in and out of bed or chair) and continence (controlling bladder and bowel movement). When people are unable to perform these activities, they need assistance either from others or from mechanical devices or both. Apart from providing objective assessments

of the ability of the elderly to execute basic daily activities and the level of difficulty in executing such tasks, ADLs have been found as an important predictor of home or institutional care, living arrangements, health expenses and mortality (Palmer and Harley, 2012[37]). Functional disabilities in terms of ADLs, when assessed through household surveys, also provide understanding of socio-economic and demographic disparities in such functional limitations; the extent of familial support to those unable to execute the ADL functions gives an idea about how such informal arrangements can be expected to address the care needs.

The survey asked the respondents to assess their level of independence to carry out six different types of ADL activities covering physical domains of functionality, viz. bathing, dressing, use of toilet, mobility, incontinence and feeding, under categories of 'do not require assistance', 'require partial assistance' and 'require full assistance'. Table 8.3 presents the percentage of elderly persons who need full or partial assistance in ADL activities by place of residence and sex.

Table 8.3: Percentage of Elderly Needing Full/Partial Assistance in ADL According to Sex and Place of Residence, SDHS-2014, DPRK

	Men			Women			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Bathing	8.6	4.6	7.0	7.5	7.3	7.4	7.9	6.2	7.2
Dressing	5.6	3.3	4.7	5.5	5.5	5.5	5.5	4.6	5.2
Toilet	4.2	2.4	3.5	3.8	3.6	3.7	4.0	3.1	3.6
Mobility	3.8	2.5	3.3	3.7	2.5	3.3	3.7	2.5	3.3
Continence	4.1	1.7	3.1	2.9	2.5	2.8	3.3	2.2	2.9
Feeding	2.3	1.3	1.9	1.9	1.6	1.8	2.0	1.5	1.8
Total 60+	1,640	1,097	2,737	2,693	1,721	4,414	4,333	2,818	7,151

The study found that seven percent of the elderly required assistance in bathing. The next in order was dressing, toileting, mobility and continence followed by feeding. Invariably, elderly urbanites had more problems than rural counterparts and this is because urban men had more problems than their rural counterparts and women. However, when women as a segment are analysed, they had more problems than men in bathing, dressing and toileting while more men stated continence. The percentages for feeding activity remained more or less the same.

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[37] Palmer, Michael and David Harley (2012). 'Models and measurement in disability: an international review'. *Health Policy and Planning* Vol 27, pp: 287-311.

Age-wise analysis shown in Figure 8.1 reveals that the elderly needing assistance increases with age. Assistance in all ADL activities is substantially higher for the elderly aged 80 and above in comparison to other age cohorts and more specifically the 60-69 years age cohort. Assistance in bathing, dressing and toileting are more commonly cited responses than continence, mobility and feeding, yet requiring support.

Figure 8.1: Elderly Needing Partial/Full Assistance in ADL by Age, SDHS-2014, DPRK
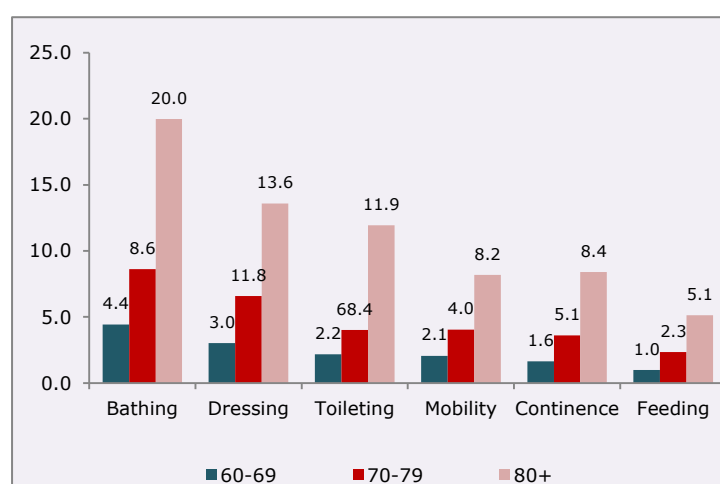
To better understand the need for assistance in ADL, the data has been analysed by the elderly requiring assistance in at least one activity and in at least three activities by selected background characteristics (Table 8.4).

The table reveals that one in five 80+ elderly persons need assistance in performing at least one activity and 12 percent need assistance for at least three activities, which is more than twice higher than the 70-79 years age group. Also, more women than men need assistance in at least three ADL activities. As observed earlier in the case of self-rated health, more urban elderly, widowed and less educated people required assistance in one and three activities.

Table 8.4: Percentage of Elderly by ADL Limitations According to Select Background Characteristics, SDHS-2014, DPRK

	Need assistance in at least one activity	Need assistance in at least three activities	Total 60+
Age of Elderly			
60-69	4.9	2.2	3,879
70-79	10.1	4.6	2,669
80+	21.3	12.2	603
Sex			
Men	8.3	3.5	2,737
Women	8.1	4.2	4,414

Contd.

	Need assistance in at least one activity	Need assistance in at least three activities	Total 60+
Place of Residence			
Urban	9.0	4.2	4,333
Rural	6.7	3.4	2,818
Marital Status			
Married	6.9	3.0	4,210
Widowed and others	10.0	5.3	2,941
Education			
None/Pre-School	21.8	15.0	63
Primary to Vocational <(3yrs)	8.1	3.7	6,198
Post-Secondary & above	7.7	4.7	890
Total 60+	8.2	3.9	**7,151**

Hence, the SDHS further probed the elderly requiring either partial or full assistance for the activities cited above as to whether they receive care or not and if so, who is the main care-giver; and when main care-giver is not present, who else provides care. It is observed that in case of men, the main care-giver was the spouse followed by a son and when the main care- giver was not there, a son usually took the responsibility of providing care. However, a substantially large proportion had to manage without any care. On the other hand for women, the main care-givers were daughter and son/daughter-in-law but in their absence, the majority had to manage on their own or rely on other relatives. As far as duration of assistance is concerned, it varied across the activities and ranges between six months to five years with about one in five elderly persons reporting having needed assistance for over five years. Thus, functionality-related problems among the elderly, especially the old-oldest category, are apparent and efforts to address this substantially large age group will have to be made and at the same time prevention-related activities for the younger age group have to be introduced.

8.3. Locomotor Disability

The SDHS survey also collected information on the locomotor disability, if any, of elderly persons. The survey asked each respondent about the difficulty regarding vision, hearing, walking, memory, self-care and speech. The notion of disability includes either partial or full (reported) difficulty in executing the respective functions.

Table 8.5 presents the percentage of elderly people with locomotor disability. The prevalence of locomotor disability varies from about 21 percent for walking to about five percent each for speech and self-care. These disabilities, however, do seem to have gender and rural-urban variations. They are more pronounced among rural women despite the fact that these are the inevitable consequence of ageing.

Table 8.5: Percentage of Elderly by Full/Partial Locomotor Disability According to Sex and Place of Residence, SDHS-2014

	Men			Women			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Seeing	7.1	7.2	7.1	10.1	11.7	10.7	9.0	9.9	9.4
Hearing	8.8	10.4	9.4	9.7	11.0	10.2	9.4	10.8	9.9
Walking/climbing stairs	18.4	18.5	18.4	21.5	23.2	22.1	20.3	21.3	20.7
Remembering/concentrating	8.6	9.7	9.1	10.6	11.2	10.9	9.9	10.6	10.2
Self-care	5.1	4.3	4.8	4.5	5.0	4.7	4.7	4.7	4.7
Speech	4.8	5.3	5.0	3.9	6.0	4.7	4.2	5.7	4.8
Total 60+	1,640	1,097	2,737	2,693	1,721	4,414	4,333	2,818	7,151

In order to further find out the magnitude of the elderly affected by locomotor disability with advancing age, the percentage of the elderly by each of these disabilities in different age groups is presented in Figure 8.2.

Age undoubtedly is a strong predictor of all the disabilities, particularly in the case of walking, hearing, memory and vision. Although a relationship between age and all disabilities exists, the magnitude of differences seems to be most substantial between younger and older age cohorts. As locomotor disabilities are mainly a function of age embracing all sections of the population, the minimisation of their ill effects

Figure 8.2: Elderly with Locomotor Disability by Age, SDHS-2014 DPRK

mainly depends upon the use of proper aids to overcome the difficulties. By using appropriate aids such as spectacles, hearing aids and walking sticks, it is possible to ameliorate to some extent the inevitable difficulties.
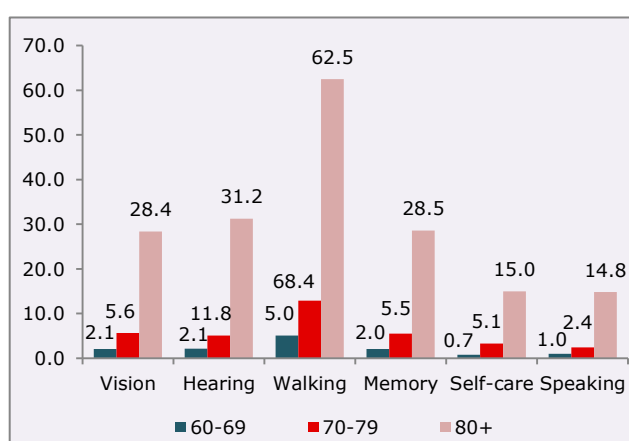
APPENDIX 1. SAMPLE DESIGN AND IMPLEMENTATION

The sampling design of the SDHS 2014 was developed to produce statistically valid and reliable estimates for key indicators at national and provincial level, as well as for urban and rural areas, and for UNFPA project areas (11 counties in four provinces) and non-project areas. The design also took into account the relevance of comparability with the sampling design of the MICS 2009. A stratified two-stage sample design was used for the selection of the sample.

Sample frame and selection of sampling units

The 2013 DPRK household listing was used as the sampling frame. Census Enumeration Areas (EAs) with the 2013-updated number of households were used as the Primary Sampling Units (PSUs) to be selected in the first sampling stage. However, for reasons of comparability with the 2008 census analyses, the 2008 provincial and urban-rural boundaries were applied, rather than the administrative boundaries that were revised in the intermediate period. The PSUs were sampled with a probability proportional to size (PPS).

Within selected EAs, the second sampling stage consisted of sampling households as the Final Sampling Units (FSUs), using systematic sampling with random start. The sample was drawn from an EA household listing that was updated immediately before the data collection, in order to account for the change in the number of households since the 2013 household listing.

Table A.1: Distribution of (a) households and (b) enumeration areas, by project- and non-project areas, urban-rural residence, and by province (2013, according to 2008 administrative division)

a. Households

Province	Non-project areas			Project areas			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Total	3,689,427	2,149,577	5,839,004	141,787	229,142	370,929	3,831,214	2,378,719	6,209,933
Ryanggang	125,642	66,741	192,383	0	0	0	125,642	66,741	192,383
N. Hamgyong/ Rason	453,724	166,450	620,174	0	0	0	453,724	166,450	620,174
S. Hamgyong	435,366	245,100	680,466	50,385	83,111	133,496	485,751	328,211	813,962

Contd.

Province	Non-project areas			Project areas			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Kangwon	166,234	147,484	313,718	22,674	53,448	76,122	188,908	200,932	389,840
Jagang	222,390	122,404	344,794	0	0	0	222,390	122,404	344,794
N. Phyongan	392,867	336,726	729,593	0	0	0	392,867	336,726	729,593
S. Phyongan/ Nampho	655,224	280,436	935,660	62,687	77,656	140,343	717,911	358,092	1,076,003
N. Hwanghae	252,302	282,671	534,973	6,041	14,927	20,968	258,343	297,598	555,941
S. Hwanghae	226,164	386,281	612,445	0	0	0	226,164	386,281	612,445
Pyongyang	759,514	115,284	874,798	0	0	0	759,514	115,284	874,798

b. Enumeration areas

Province	Non-project areas			Project areas			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Total	18,464	14,509	32,973	703	1,495	2,198	19,167	16,004	35,171
Ryanggang	596	431	1,027	0	0	0	596	431	1,027
N. Hamgyong/ Rason	2,350	1,082	3,432	0	0	0	2,350	1,082	3,432
S. Hamgyong	2,174	1,516	3,690	231	509	740	2,405	2,025	4,430
Kangwon	821	1,006	1,827	127	335	462	948	1,341	2,289
Jagang	1,154	861	2,015	0	0	0	1,154	861	2,015
N. Phyongan	1,912	2,489	4,401	0	0	0	1,912	2,489	4,401
S. Phyongan/ Nampho	3,384	1,903	5,287	326	486	812	3,710	2,389	6,099
N. Hwanghae	1,343	1,912	3,255	19	165	184	1,362	2,077	3,439
S. Hwanghae	1,124	2,569	3,693	0	0	0	1,124	2,569	3,693
Pyongyang	3,606	740	4,346	0	0	0	3,606	740	4,346

Sample allocation

For policy and programme reasons, survey results were required to be statistically valid and reliable at national and provincial level as well as for urban and rural areas and for UNFPA project areas. The sampling design was provided in 11 analytical domains--ten for the provinces and one for the UNFPA project areas--with urban and rural areas defined as strata within each domain. A choice was made for equal allocation of PSUs across domains, so as to optimise inter-province comparability and consistency with the MICS 2009 sampling design. In order to accommodate a sufficient sample for UNFPA project areas, more PSUs were allocated to provinces with project areas. Table I.1 presents the distribution of sampled EAs and households.

The size of the clusters that were selected in the second sampling stage was set at 25 households per EA, based on such considerations as budget availability, design effect and comparability with the MICS sampling design.

Table A.2: Distribution of sampling units, by project- and non-project areas, urban-rural residence, and by province (SDHS-2014)

a. Sampled enumeration areas (PSUs)

Province	Non-project areas			Project areas			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Total	290	190	480	19	31	50	309	221	530
Ryanggang	33	17	50	0	0	0	33	17	50
N. Hamgyong/ Rason	37	13	50	0	0	0	37	13	50
S. Hamgyong	29	16	45	7	11	18	36	27	63
Kangwon	24	21	45	3	7	10	27	28	55
Jagang	32	18	50	0	0	0	32	18	50
N. Phyongan	27	23	50	0	0	0	27	23	50
S. Phyongan/ Nampho	32	13	45	8	11	19	40	24	64
N. Hwanghae	21	24	45	1	2	3	22	26	48
S. Hwanghae	18	32	50	0	0	0	18	32	50
Pyongyang	37	13	50	0	0	0	37	13	50

b. Sampled households (FSUs)

Province	Non-project areas			Project areas			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Total	7,250	4,750	12,000	475	775	1,250	7,725	5,525	13,250
Ryanggang	825	425	1,250	0	0	0	825	425	1,250
N. Hamgyong/ Rason	925	325	1,250	0	0	0	925	325	1,250
S. Hamgyong	725	400	1,125	175	275	450	900	675	1,575
Kangwon	600	525	1,125	75	175	250	675	700	1,375
Jagang	800	450	1,250	0	0	0	800	450	1,250
N. Phyongan	675	575	1,250	0	0	0	675	575	1,250
S. Phyongan/ Nampho	800	325	1,125	200	275	475	1,000	600	1,600
N. Hwanghae	525	600	1,125	25	50	75	550	650	1,200
S. Hwanghae	450	800	1,250	0	0	0	450	800	1,250
Pyongyang	925	325	1,250	0	0	0	925	325	1,250

Sample size

The sample size for the SDHS 2014 was set at 13,250 households. This number was derived on the basis of an assessment of the required sample size for reliable estimates of selected key variables (a) for each of the domains with 95% confidence level and 10% sampling error (modern contraceptive use, skilled birth attendance, appropriate breastfeeding 0-23 months, and proportion of the population with access to improved sanitation), and (b) at national level with

95% confidence level and 15% sampling error (infant and under-5 mortality).

The following formula was applied to estimate the total sample size:

$$n = \frac{z2 \quad * r * (r - 1) * d * f * k}{p * h * e^2}$$

where **n** is the sample size;

>   **z** is a score associated with a selected confidence level;

>   **r** is a key indicator expressed as a proportion;

>   **d** is the number of domains in the sample design for which reliable estimates are required;

>   **f** is the design effect for cluster sampling[38];

>   **k** is a multiplier for the expected proportion of non-response (10 percent);

>   **p** is the proportion of the target population, to which the key indicator r applies;

>   **h** is the average household size to be applied if the key indicator is at individual level;

>   **e** is the allowed margin of error.

Calculation of sample weights

Household weights

The first step in calculating the sample weights was calculating the design weights that would inflate the sampled households to the number of households in the sampling frame. This calculation follows from the selection probability of

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[38] The design effect refers to the extent to which the expected sampling error in a more complicated survey design differs from the sampling error if a simple random sampling would have been chosen.

the households as defined in the sampling design. The selection of PSUs in the first sampling stage was implemented in accordance with the stratification design and with selection probability proportional to the number of households within each stratum.

The overall probability of selecting a household according to the sampling design ($p_{1,2}$) is the product of the selection probabilities in the two sampling stages:

$$p_{1,2} \; = \; p_1 * p_2 \; = \; (c_s * {}_{13}h_{ps} / {}_{13}H_s) * (25 / {}_{13}h_{ps}) \; = \; 25 * c_s / {}_{13}H_s$$

where p_s is the probability of selecting PSU (or EA) p in stratum s and p_2 is the probability of selecting a household in an EA; c_s is the number of clusters selected in stratum s, ${}_{13}h_{ps}$ is the number of households in EA p from stratum s and ${}_{13}H_s$ is the number of households in stratum s as reported in the sampling frame. The design weight for each sampled household in stratum s (${}_{d}w_{hs}$) is the reciprocal of the selection probability, thus

$$_{d}w_{hs} = 1 / p_{1,2} \; = \; {}_{13}H_s / 25c_s$$

To compensate for non-responding households, [39] the design weight was adjusted. The non-response adjustment factor $_{n}w_{hs}$ is the reciprocal of the non-coverage rate, which is the ratio between the number of actually interviewed households and the number of sampled households:

$$_{n}w_{hs} \; = \; 1 / nr_s \; = \; {}_{s}h_s / {}_{I}$$

where nr_s is the non-response rate in stratum s, $_I$ is the number of interviewed households in stratum s and $_{s}h_s$ is the number of sampled households in stratums.

An additional re-scaling factor was applied for each selected EA to adjust for the change in the number of households between the 2013 household listing and updated listing before the SDHS data collection in 2014. This re-scaling factor is calculated as the ratio between the number of households in the updated listing (${}_{14}h_{ps}$) and the number of households in the sampling frame (${}_{13}h_s$):

$$_{r}w_{hsp} \; = \; {}_{14}h_s / {}_{13}h_s$$

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[39] In SDHS 2014 all selected EAs could be reached, but for 12 selected households no information could be obtained, because the household was locked during the field visit. Overall non-response was 1 percent.

The final household sampling weight becomes the product of the design weight, the non-response weight and the re-scaling factor:

$$W_{hsp} = {}_dW_{hs} * {}_nW_{hs} * {}_rW_{hsp}$$

Individual weights

For eligible women—women who are ever-married and aged 15-49—women's weights (w_{ws}) were produced. These women's weights are the product of the women's non-response factor ($_nw_{ws}$) and the final household weight (w_{hsp}), where the non-response factor is calculated as the ratio between the number of eligible women per stratum ($\Sigma\ f_s$) and the number of interviewed eligible women per stratum ($\Sigma\ {}_if_s$):

$$_nw_{ws} = \Sigma\ f_s\ /\ \Sigma\ {}_if_s$$

For the elderly—persons 60 years and over—weights were calculated according to the same procedure as for eligible women. The elderly non-response factor ($_nw_{es}$) is:

$$_nw_{es} = \Sigma\ e_s\ /\ \Sigma\ {}_ie_s$$

where $\Sigma\ e_s$ is the number of the elderly per stratum and $\Sigma\ {}_ie_s$ is the number of the interviewed elderly per stratum. The elderly weights are the product of the elderly non-response factor ($_nw_{es}$) and the final household weight (w_{hsp}).

In case household-level information needed to be expanded to individual-level indicators, a general individual weight was produced, which can be applied to household-level data. For general individual weights, no non-response factor is required, as all household members are listed in the household roster. The general individual weight was calculated as the product of the household size and the final household weight.

$$W_{is} = hh\_size * w_{hsp}$$

APPENDIX 2.

AGE-SEX DISTRIBUTION OF POPULATION, DPRK 2014
(ESTIMATED FROM SAMPLING WEIGHTS)

Age Distribution	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4	511,202	484,273	995,475	354,236	343,257	697,493	865,438	827,529	1,692,967
5-9	501,584	466,324	967,908	356,205	348,166	704,371	857,789	814,490	1,672,279
10-14	547,946	490,887	1,038,833	376,208	376,905	753,113	924,154	867,792	1,791,946
15-19	520,537	556,161	1,076,697	318,622	383,344	701,966	839,159	939,504	1,778,663
20-24	415,060	583,081	998,141	244,488	371,758	616,247	659,548	954,840	1,614,388
25-29	484,437	537,976	1,022,413	353,151	355,060	708,211	837,588	893,036	1,730,624
30-34	528,330	539,908	1,068,238	352,269	342,046	694,315	880,599	881,954	1,762,553
35-39	509,570	511,517	1,021,086	356,674	336,809	693,483	866,244	848,325	1,714,569
40-44	714,041	696,097	1,410,138	398,532	413,010	811,542	1,112,574	1,109,106	2,221,680
45-49	615,880	627,415	1,243,295	373,833	386,387	760,220	989,713	1,013,802	2,003,515
50-54	472,529	517,102	989,631	272,192	280,938	553,130	744,721	798,040	1,542,761
55-59	411,695	428,594	840,289	219,786	241,355	461,141	631,481	669,949	1,301,430
60-64	241,879	289,571	531,451	176,376	177,090	353,467	418,256	466,662	884,917
65-69	270,707	348,160	618,867	150,077	200,249	350,327	420,784	548,409	969,193
70-74	172,799	300,023	472,822	106,611	183,038	289,649	279,410	483,061	762,471
75-79	91,030	236,856	327,886	49,008	113,185	162,193	140,038	350,042	490,079
80-84	29,925	110,382	140,306	9,334	62,005	71,339	39,259	172,387	211,646
85-89	3,634	34,245	37,879	2,263	16,939	19,202	5,897	51,184	57,081
90-94	1,359	6,528	7,888	0	2,118	2,118	1,359	8,646	10,005
95+	0	152	152	0	590	590	0	742	742
Total	7,044,143	7,765,252	14,809,396	4,469,867	4,934,247	9,404,114	11,514,010	12,699,499	24,213,510

Note: Total population reflects private households and civil institutional living quarters

APPENDIX 3. QUESTIONNAIRE

Democratic People's Republic of Korea
Socio-economic, Demographic and Health Survey 2014

Household questionnaire

1. Household identification

1.1.	Province					1.6.	Name of Head of household
	Ryangang.........	01	North Phyongan..	06			
	North Hamgyong...	02	South Phyongan.	07	1.7.	Interviewer name and number
	South Hamgyong	03	North Hwanghae.	08		
	Kangwon	04	South Hwanghae.	09		
	Jagang	05	Pyongyang	10		

1.2. City(District) / County _____ ☐☐

1.3. Ri (Up /Gu /Dong) _____ ☐☐☐

1.4. Cluster number .... ☐☐

1.5. Household number .... ☐☐

1.8. Supervisor name & number _____ ☐☐

1.9. Residence   Urban 1
   Rural 2

I AM FROM THE CENTRAL BUREAU OF STATISTICS. I WOULD LIKE TO TALK TO YOU ABOUT SUBJECTS CONCERNED WITH YOUR HOUSEHOLD. ALL THE INFORMATION I OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL. THE INTERVIEW WILL TAKE ABOUT 1 HOUR.

MAY I START NOW? *x*

☐ *If permission is given, begin the interview.*

☐ *If permission is not given, complete Module 2 and discuss this refusal with your supervisor.*

2. Process monitoring

INS: After all questionnaire for the household have been completed, fill in the following information:

		Interviewer visits			
		1st visit	2nd visit	3rd visit	Final visit
2.1.	Date a. Month	☐☐	☐☐	☐☐	☐☐
	b. Day	☐☐	☐☐	☐☐	☐☐

2.2.	Result of household interview		2.3.	Respondent to household questionnaire:
	Completed 1			
	Not at home ....|................................... 2			Name: _____
	Refused 3			
	Household not found / destroyed 4			Line Number Household roster .... ☐☐
	Other (*specify*) _____ 6			

2.4. Total number of household members .... ☐☐

2.5. No. of elgible women aged 15-49 years ... ☐☐

2.6. No. of eligible women's questionnaires completed ☐☐

2.7. Number of persons aged 60 and over ... ☐☐

2.8. Number of questionnaires completed for persons 60 years and over ☐☐

2.9. Edited by (Name and number): *Office fill-in*
Name: _____ ☐☐

2.10. Data entry clerk-first entry (Name & number): *Office fill-in*
Name: _____ ☐☐

2.11. Data entry clerk-second entry (Name & number): *Office fill-in*
Name: _____ ☐☐

	3. Household And Dwelling Unit Information		
3.1.	How many members are there in this household? How many are men? How many are women?	a. Total members .... b. Men .... c. Women	☐☐ ☐☐ ☐☐
3.2.	What type of dwelling does this household occupy?	Single detached house .... 1 Row house .... 2 Apartment building .... 3 Other 6	
3.3.	What is the total floor area of this dwelling unit (square meter)? .... m² ☐☐☐		
3.4.	How many rooms are there in this dwelling unit? .... ☐☐		
3.5.	What is the main source of water supply for your household?	Piped water into dwelling unit .... 01 Public tap .... 02 Tube well/borehole with pump .... 03 Protected waterhole .... 04 Protected spring .... 05 Lake, river .... 06 Others 96	
3.6.	What kind of toilet facility does your household have access to?	Flush toilet, private .... 1 Flush toilet, shared .... 2 Pit latrine, private .... 3 Pit latrine, shared .... 4 No facility 5	
3.7.	What heating systems are used in this dwelling? *Circle all systems used (do not circle non functional systems)*	Central or local heating system .... a Electric heating system .... b Coal boiler or Briquette hole in dwelling .... c Wood hole in this dwelling .... d Others .... x No heating system used .... f	
3.8.	What type of fuel are used for cooking? *Circle all fuels used*	Electricity .... a Gas .... b Petroleum .... c Coal .... d Wood .... e Others x	

3.9.	Does your household have:
	
	      a. Electricity? ....
	      b. A radio? ....
	      c. A television? ....
	      d. A bicycle? ....
	      e. A landline telephone? ....
	      f. A refrigerator/deep freezer? ....
	      g. A rice cooker? ....
		Yes No
		 1 2
		 1 2
		 1 2
		 1 2
		 1 2
		 1 2
		 1 2	

3.10.	How many heads of livestock (i.e. goats and pigs) are owned by members of this household? .... ☐☐ *Record '00' if no livestock is owned*		
3.11.	How many mobile phones are owned by (registered) members of this household? .... ☐☐ *Record '00' if no mobile phone is owned*		

				4. Household roster			
4.1.	4.2.	4.3.	4.4.	4.5.	4.6.	4.7.	4.8.
Line No.	Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household.	Is \<name\> currently registered with this household?	What is the relationship of \<name\> to the head of household?	Is \<name\> male or female?	When was \<name\> born? Write down the year and month. Month not known code 98.	How old was he/she at his last birthday?	What is person's current marital status? For persons 17 years old and over
	Enter names below. First fill in all questions 4.2-4.5 for all household members and then fill in the rest of the questions 4.6 - 4.22 for each individual member separately.	1 = Yes 2 = No	Codes see below	1 = Male 2 = Female	Year Month	Enter age in completed years	Codes see below
01		1 2	0 1	1 2			
02		1 2		1 2			
03		1 2		1 2			
04		1 2		1 2			
05		1 2		1 2			
06		1 2		1 2			
07		1 2		1 2			
08		1 2		1 2			
09		1 2		1 2			
10		1 2		1 2			

INTERVIEWER:
List all people who usually live and sleep in this household, starting with the head of the household.

Record all people who usually stay here, including babies and infants, and people who are not immediate kin.

4.4. Relationship to head of household
01 = Household head
02 = Wife or husband
03 = Son or daughter
04 = Grand child
05 = Son or daugher-in-law
06 = Parent
07 = Relative
'08 = Unrelated member

4.8. Marital Status
1 = Never married
2 = Married
3 = Widowed
4 = Separated
5 = Divoroed

4. Household roster								
4.1.	**4.9.**	**4.10.**			**4.11.**	**4.12.**	**4.13.**	**4.14.**	**4.15.**
Line No.	Did \<name\> reside in this province 5 years age?	If different from current residence, enter name of province, county and whether it was up/gu/dong or a ri.			Can \<name\> read and write a simple message with understanding?	Is \<name\> attending pre-school or school?	What level of schooling is \<name\> presently attending?	What is \<name\> 's highest level of education?	What was \<name\> 's field of study?
		For persons 5 years and over							*For persons 16 years and over*
	1 = same province ⌐→ Goto 4.11. 2 = other province	Province	City, county	1 = Up/Gu/ Dong 2 = Ri	1 = Yes 2 = No	1 =Yes 2 = No ⌐→ Goto 4.14.	Codes see below.	*If answer is 01 to 05 skip to 4.16.* Codes see below.	*ISCED* Code
01	1 2	____ ☐☐	____ ☐☐	☐	1 2	1 2	☐☐	☐☐	____ ☐☐☐
02	1 2	____ ☐☐	____ ☐☐	☐	1 2	1 2	☐☐	☐☐	____ ☐☐☐
03	1 2	____ ☐☐	____ ☐☐	☐	1 2	1 2	☐☐	☐☐	____ ☐☐☐
04	1 2	____ ☐☐	____ ☐☐	☐	1 2	1 2	☐☐	☐☐	____ ☐☐☐
05	1 2	____ ☐☐	____ ☐☐	☐	1 2	1 2	☐☐	☐☐	____ ☐☐☐
06	1 2	____ ☐☐	____ ☐☐	☐	1 2	1 2	☐☐	☐☐	____ ☐☐☐
07	1 2	____ ☐☐	____ ☐☐	☐	1 2	1 2	☐☐	☐☐	____ ☐☐☐
08	1 2	____ ☐☐	____ ☐☐	☐	1 2	1 2	☐☐	☐☐	____ ☐☐☐
09	1 2	____ ☐☐	____ ☐☐	☐	1 2	1 2	☐☐	☐☐	____ ☐☐☐
10	1 2	____ ☐☐	____ ☐☐	☐	1 2	1 2	☐☐	☐☐	____ ☐☐☐

<u>INTERVIEWER:</u>
List all people who usually live and sleep in this household, starting with the head of the household.

Record all people who usually stay here, including babies and infants, and people who are not immediate kin.

4.13. Schooling level

01 = Pre-school	05 = Vocational (< 3 yrs)
02 = Primary	06 = Post Secondary (3yrs)
03 = Secondary junior	07 = Tertiary
04 = Secondary senior	08 = Advanced Tertiary

'4.14. Highest level of education

00 = None	05 = Vocational(<3yrs)
01 = Pre-school	06 = Post secondary
02 = Primary	(3yrs)
03 = Secondary junior	07 = Tertiary
04 = Secondary senior	08 = Advanced Tertiary

4.1.	4.16.		4.17.	4.18.	4.19.	4.20.	4.21.	4.22.
Line No.	Did \<name\> work last week?		Why did \<name\> not work last week?	What kind of activities is performed by the establishment/enterprise \<name\> is normally working?	What is \<name\> 's occupation?	On average, how many hours a day did \<name\> spend doing these activities during the last week?	*Eligibility Module 6; Check Qs 4.5, 4.7 & 4.8*	*Eligibility Module 10*
				Describe the main products or activities of that establishment.	*Describe the position or type of work this person does.*		*Circle line number of ever married women aged 15 - 49.*	*Circle line number for all persons aged 60+ years*
	For persons 16 years of age and older			*For persons 16 years of age and older who are working*				
	1 = Yes → Goto 4.18 2= No		*Codes see below.* *If answer is 02 to 06, skip to 4.21.*	*ISIC* Code	*ISCO* Code	*Codes see below.*		
01	1	2	☐☐	_____ ☐☐	_____ ☐☐☐	☐☐	01	01
02	1	2	☐☐	_____ ☐☐	_____ ☐☐☐	☐☐	02	02
03	1	2	☐☐	_____ ☐☐	_____ ☐☐☐	☐☐	03	03
04	1	2	☐☐	_____ ☐☐	_____ ☐☐☐	☐☐	04	04
05	1	2	☐☐	_____ ☐☐	_____ ☐☐☐	☐☐	05	05
06	1	2	☐☐	_____ ☐☐	_____ ☐☐☐	☐☐	06	06
07	1	2	☐☐	_____ ☐☐	_____ ☐☐☐	☐☐	07	07
08	1	2	☐☐	_____ ☐☐	_____ ☐☐☐	☐☐	08	08
09	1	2	☐☐	_____ ☐☐	_____ ☐☐☐	☐☐	09	09
10	1	2	☐☐	_____ ☐☐	_____ ☐☐☐	☐☐	10	10

4. Household roster

INTERVIEWER:
List all people who usually live and sleep in this household, starting with the head of the household.

Record all people who usually stay here, including babies and infants, and people who are not immediate kin.

4.17. Reason not worked last week
01 = Normally working, but sick/holidays, other reason
02 = Studying
03 = Incapacitated
04 = Retired
05 = Doing Housework
06 = Doing nothing

4.20. Weekly activities hours
01 = None
02 = < 1 hour
03 = 1 – 3 hours
04 = 4 – 6 hours
05 = 7 – 8 hours
06 = 9 and more hours

		5. Mortality			

5.1.	Did any member of this household die in the last 12 months?		Yes .... 1 No .... 2 ⟶ Go to 6.1.		

		a. 1st person died	b. 2nd person died	c. 3rd person died	d. 4th person died
5.2.	What was/were the name(s) of the household member(s) who died?	_____	_____	_____	_____
5.3.	What was the sex of the deceased household member?	Male ....'1 Female 2	Male ....'1 Female 2	Male ....'1 Female 2	Male ....'1 Female 2
5.4.	When was \<name\> born?	Year ☐☐☐☐ Month ☐☐ Day ☐☐	Year ☐☐☐☐ Month ☐☐ Day ☐☐	Year ☐☐☐☐ Month ☐☐ Day ☐☐	Year ☐☐☐☐ Month ☐☐ Day ☐☐
5.5.	When did \<name\> die?	Year [2][0]☐☐ Month ☐☐ Day ☐☐	Year [2][0][1]☐ Month ☐☐ Day ☐☐	Year [2][0][1]☐ Month ☐☐ Day ☐☐	Year [2][0][1]☐ Month ☐☐ Day ☐☐
5.6.	How old was \<name\> when he/she died? Enter '00' if less than 1 year, '99' if age not known, '98' if 98 years or older	Completed age ☐☐	Completed age ☐☐	Completed age ☐☐	Completed age ☐☐
	For _female members who died between ages 15 - 49_, leave open if deceased person is male or outside age-range.				
5.7.	Was \<name\> pregnant at time of her death?	Yes .... 1 ⟶ Goto 5.10. No .... 2 Not sure 3	Yes .... 1 ⟶ Goto 5.10. No .... 2 Not sure 3	Yes .... 1 ⟶ Goto 5.10. No .... 2 Not sure 3	Yes .... 1 ⟶ Goto 5.10. No .... 2 Not sure 3
5.8.	Did \<name\> die while having an abortion or miscarriage or within 42 days of having an abortion or miscarriage?	Yes .... 1 ⟶ Goto 5.10 No 2	Yes .... 1 ⟶ Goto 5.10 No 2	Yes .... 1 ⟶ Goto 5.10 No 2	Yes .... 1 ⟶ Goto 5.10 No 2
5.9.	Did \<name\> die while giving birth or within 42 days of giving birth?	Yes .... 1 No .... 2 ⟶ Goto next	Yes .... 1 No .... 2 ⟶ Goto next	Yes .... 1 No .... 2 ⟶ Goto next	Yes .... 1 No .... 2 ⟶ Goto next
5.10.	Where did \<name\> die?	Home .... 1 Hospital .... 2 Other place 3	Home .... 1 Hospital ....2 Other place 3	Home .... 1 Hospital .... 2 Other place 3	Home .... 1 Hospital .... 2 Other place 3

Questionnaire Women aged 15 - 49 Years

6. Marriage (Only for Ever Married Women aged 15 - 49 years old)

6.1.	The questions on marriage and reproduction are restricted to **ever married women 15 - 49 years old**. Check the household roster in HH Questionnaire and fill in a separate questionnaire for each woman in the age-category 15 - 49 years. These questions should be asked to each eligible woman individually and not to the head of household or main informer. First, copy the line number of the elgible woman you are about to interview from the household roster. Check the date of birth with the woman and write down the year and month of birth. a. Line number of EW in household roster: .... ☐☐ b. Year of birth of woman: .... ☐☐☐☐ c. Month of birth of woman: .... ☐☐
6.2.	What is your current marital status? Currently Married .... 2 Widowed .... 3 ⌉ Separated .... 4 ├ *Skip to 6.5.* Divorced .... 5 ⌋
6.3.	Is your husband living with you now or is he staying elsewhere? Living with her .... 1 Staying elsewhere .... 2 *Skip to 6.5.*
6.4.	*Record the husband's name and line number from the household questionnaire. If he is not listed in the household, record '00'.* Name: _____ Line number: .... ☐☐
6.5.	How old were you when you first started living with your (first) husband? .... ☐☐

	7. Reproduction (ever married women aged 15 - 49)		
7.1.	How many sisters, other than you (born to the same mother) have you ever had, who were ever married (including those who are now no longer alive)? *If answer is '00, skip to 7.5.*		☐☐
7.2.	How many of these ever-married sisters are alive now?		☐☐
7.3.	How many of these ever-married sisters are dead? *Note: 7.3 + 7.2 has to be equal to 7.1, please CHECK.* *If answer is '00, skip to 7.5.*		☐☐
7.4.	How many of these dead sisters died while they were pregnant, or during childbirth, or during the six weeks (42 days) after the end of pregnancy?		☐☐
	Now I would like to ask about all births you have had during your life. By this I mean all the children born to you, whether they are still living or not. I understand that it is not easy to talk about children who have died, but it is important that you tell us about all of them, so that the programs can be developed to improve children's health.		
7.5.	Have you ever been pregnant? *Including current pregnancy and those that did not result in live births*	Yes .... 1 No .... 2 *Skip to 8.1*	
7.6.	Have you ever given birth to a child ?	Yes .... 1 No .... 2 *Skip to 8.1*	
7.7.	a. How many sons live with you now? .... b. And how many daughters live with you now? .... *If none record '00'*		☐☐ ☐☐
7.8.	Do you have any sons or daughters to whom you have given birth, who are alive but do not live with you?	Yes .... 1 No .... 2 *Skip to 7.10.*	
7.9.	a. How many sons are alive but do not live with you? .... b. And how many daughters are alive but do not live with you? .... *If none record '00'*		☐☐ ☐☐
7.10.	Have you ever given birth to a boy or girl who was born alive but later died? *If NO, probe: Any baby who cried or showed signs of life but did not survive?*	Yes .... 1 No .... 2 *Skip to 7.12*	
7.11.	a. How many boys have died? .... b. And how many girls have died? .... *If none record '00'*		☐☐ ☐☐
7.12.	*Sum answers to questions 7.7, 7.9 and 7.11. and enter total births ....* *If none record '00'*		☐☐
7.13.	*Check 7.12 with respondent:* Just to make sure that I have this right: you have had in TOTAL ____ births during your life. Is that correct?	Yes:	*Then continue with 7.14*
		No:	*Probe and correct 7.7, 7.9, 7.11 and 7.12 as necessary*
7.14.	*Calculate the number of children surviving, ...* *i.e. 7.13. - 7.11.a. - 7.11.b.*		☐☐

	7. Reproduction (ever married women aged 15 - 49)		

| 7.15. | Check 7.14. with respondent:
Just to make sure that I have this right: _____ of the children you have given birth to are still alive. Is that correct? | Yes: | Then continue with 7.16. |
| | | No: | Probe and correct
7.11.a. and 7.11.b. as necessary |

7.16.	Did you have a live birth during the past 36 months?	Yes .... 1 No .... 2 *Skip to 7.37.*

7.17.	To how many sons and daughters did you give birth to during the period?	Boys .... ☐ Girls .... ☐

7.18.	Did you see anyone for antenatal care during pregnancy with your last birth?	Yes .... 1 No .... 2 *Skip to 7.22*

7.19.	Whom did you see?
	   Probe: Anyone else?
	   Probe for the type of person seen and circle all answers given.
		Doctor/assistant doctor ....a
		Nurse/midwife .... b
		Other (specify) x
		_____

7.20.	a. How many times did you receive antenatal care during this pregnancy? b. How many months pregnant were you when you first availed antenatal care services?	Times ☐☐ Month of pregnancy ☐☐

7.21.	As part of your antenatal care during this pregnancy, were any of the following done at least once:		Yes	No
	a. Was your blood pressure measured?		1	2
	b. Did you give a urine sample?		1	2
	c. Did you give a blood sample?		1	2
	d. Were you given an injection in the arm to prevent the baby from getting tetanus, that is, convulsions after birth?		1	2
	e. Did you get advice about proper nutrition during pregnancy?		1	2
	f. Were you told about told about the following signs of pregnancy related complications:			
	f.1. Vaginal bleeding?		1	2
	f.2. Convulsions?		1	2
	f.3. Prolonged labour?		1	2
	g. Was your body weight taken?		1	2

7.22.	Who assisted with the delivery of your last child?	Doctor/Asst. Doctor .... 1 Nurse/midwife .... 2 Relative/friend .... 3 Other (Specify) .... 6 _____ No one 9

7.23.	Where did you give birth to your last child?	Central hospital .... 1 Provincial hospital .... 2 County/District hospital .. 3 Ri Hospital/clinic .... 4 Home .... 5 Other .... 6 _____

7.24.	After you gave birth to <name>, did anyone check on your health?	Yes .... 1 No .... 2 *Skip to 7.27*

7.25.	Who checked on your health at that time? *Probe for most qualified person*	Doctor .... 1 Nurse/ midwife .... 2 Other 6

	7. Reproduction (ever married women aged 15 - 49)					

7.26.	How long after delivery did the first check-up take place?			Hours	☐☐
	If less than 1 day, record hours			Days	☐☐
	If less than 1 week, record days, write '98' if 'Don't know'			Weeks	☐☐
				Don't know	☐☐

7.27.	Were you satisfied with:	Highly satisfied	Satisfied	Dissatisfied	Did not receive service
	antenatal care services	1	2	3	8
	delivery care services	1	2	3	8
	post natal services	1	2	3	8

7.28.	After you gave birth to your last child did you experience any serious complications?	Yes ....|........... 1 No .... 2 *Skip to 7.30*

7.29.	What type of complication(s) did you suffer from? *(Read out each of the complications and* *ask to answer 'yes' or 'no'. Indicate all answers)*		Yes	No
		Abnormal blood loss	1	2
		Infection	1	2
		Inflammation of the breast(s) ..	1	2
		Bladder problems	1	2
		Postpartum depression	1	2
		Other complication *(specify)* ...	1	2

7.30.	During the first two months of the pregnancy with the last child, did you receive a Vitamin A dose?	Yes .... 1 No .... 2 Don't know 8

7.31.	During the pregnancy for your last child, did you take Iron and Folic Acid (IFA)/micro nutrient tablets?	Yes .... 1 No .... 2 *Skip to 7.33*

7.32.	How many months did you take Iron and Folic Acid tablets (IFA)/ micro nutrient tablets? If 'Don't Know, write 98	'Months ☐☐

7.33.	Did you ever breastfeed your last child?	Yes .... 1 No .... 2 *Skip to 7.37*

7.34.	How long after birth did you first put the baby to the breast? *If less than an hour, write '00' for hours* *If less than 24 hours record 'Hours' otherwise record days.*	Hours: .... ☐☐ Days: .... ☐☐

7.35.	Are you still breastfeeding your last child, without giving the child other food?	Yes .... 1 *Skip to 7.37* No 2

7.36.	For how long was your last child breastfed, without being given any other liquid (including water) or solid food?	.... 'Months ☐☐

7. Reproduction (ever married women aged 15 - 49)								
7.37. Now I would like to record the names of all your births, whether still alive or not, starting with the first one you had.								
7.38	7.39	7.40	7.41	7.42	7.43	7.44	7.45	7.46
What name was given to your (first/next) baby? Birth History Number Record Name	Were any of these births twins?	Is \<Name\> a boy or a girl?	In what month and year was \<Name\> born? PROBE: When is his/her birthday?	Is \<Name\> still alive?	IF ALIVE: How old was \<Name\> at his/her last birthday? Record age in completed age	IF ALIVE: Is \<Name\> living with you?	IF ALIVE: Record Household Line Number of child Record '00' If child not listed in household	IF DEAD: How old was \<Name\> when he/she died? If '1 Year', Probe: How many months old was \<Name\>? Record days if less than 2 months; Months if less than 2 years, else years
01 _____	Single.......1 Multiple....2	Boy ... 1 Girl ... 2	Year ☐☐☐☐ Month ☐☐	Yes ... 1 No .... 2 ↓ 7.46	Age in Years ☐☐	Yes ... 1 No 2	Household Line number ☐☐ ↓ (Next birth)	Days ☐☐ Months ☐☐ Years ☐☐
02 _____	Single.....1 Multiple....2	Boy ... 1 Girl ... 2	Year ☐☐☐☐ Month ☐☐	Yes ... 1 No .... 2 ↓ 7.46	Age in Years ☐☐	Yes ... 1 No 2	Household Line number ☐☐ ↓ (Next birth)	Days ☐☐ Months ☐☐ Years ☐☐
03 _____	Single....1 Multiple...2	Boy ... 1 Girl ... 2	Year ☐☐☐☐ Month ☐☐	Yes ... 1 No .... 2 ↓ 7.46	Age in Years ☐☐	Yes ... 1 No 2	Household Line number ☐☐ ↓ (Next birth)	Days ☐☐ Months ☐☐ Years ☐☐
04 _____	Single...1 Multiple...2	Boy ... 1 Girl ... 2	Year ☐☐☐☐ Month ☐☐	Yes ... 1 No .... 2 ↓ 7.46	Age in Years ☐☐	Yes ... 1 No 2	Household Line number ☐☐ ↓ (Next birth)	Days ☐☐ Months ☐☐ Years ☐☐

7. Reproduction (ever married women aged 15 - 49)								
7.38	7.39.	7.40	7.41	7.42	7.43	7.44	7.45	7.46
What name was given to your (first/next) baby? Birth History Number Record Name	Were any of these births twins?	Is \<Name\> a boy or a girl?	In what month and year was \<Name\> born? PROBE: When is his/her birthday?	Is \<Name\> still alive?	IF ALIVE: How old was \<Name\> at his/her last birthday? Record age in completed age	IF ALIVE: Is \<Name\> living with you?	IF ALIVE: Record Household Line Number of child Record '00' If child not listed in household	IF DEAD: How old was \<Name\> when he/she died? If '1 Year', Probe: How many months old was \<Name\>? Record days if less than 2 months; Months if less than 2 years, else years
05 _____	Single....1 Multiple...2	Boy ... 1 Girl ... 2	Year Month	Yes ... 1 No .... 2 ↓ 7.46	Age in Years	Yes ... 1 No 2	Household Line number ↓ (Next birth)	Days Months Years
06 _____	Single....1 Multiple...2	Boy ... 1 Girl ... 2	Year Month	Yes ... 1 No .... 2 ↓ 7.46	Age in Years	Yes ... 1 No 2	Household Line number ↓ (Next birth)	Days Months Years
07 _____	Single....1 Multiple...2	Boy ... 1 Girl ... 2	Year Month	Yes ... 1 No .... 2 ↓ 7.46	Age in Years	Yes ... 1 No 2	Household Line number ↓ (Next birth)	Days Months Years
08 _____	Single....1 Multiple...2	Boy ... 1 Girl ... 2	Year Month	Yes ... 1 No .... 2 ↓ 7.46	Age in Years	Yes ... 1 No 2	Household Line number ↓ (Next birth)	Days Months Years

	8. Contraception		
8.1.	Now I would like to talk about family planning - the various ways or methods that a couple can use to delay or avoid a pregnancy.		
	Have you ever heard of <method>?	Yes	No
8.1.a.	**Female Sterilization.** PROBE: Women can have an operation to avoid having any more children.	1	2
8.1.b.	**Male Sterilization.** PROBE: Men can have an operation to avoid having any more children.	1	2
8.1.c.	**IUD.** PROBE: Women can have a loop or coil placed inside them by a doctor or a nurse.	1	2
8.1.d.	**Injectables.** PROBE: Women can have an injection by a health provider that stops them from becoming pregnant for one or more months.	1	2
8.1.e.	**Pill.** PROBE: Women can take a pill every day to avoid becoming pregnant.	1	2
8.1.f.	**Condom.** PROBE: Men can put a rubber sheath on their penis before sexual intercourse.	1	2
8.1.g.	**Female Condom.** PROBE: Women can place a sheath in their vagina before sexual intercourse.	1	2
8.1.h.	**Rhythm Method.** PROBE: To avoid pregnancy, women do not have sexual intercourse on the days of the month they think they can get pregnant.	1	2
8.1.i.	**Withdrawal.** PROBE: Men can be careful and pull out before climax.	1	2
8.1.j.	Have you heard of **any other ways or methods** that women or men can use to avoid pregnancy? *Specify* _____	1	2
8.2.	Have you ever used anything or tried in any way to delay or avoid getting pregnant? Yes .... 1 No .... 2 → *Skip to 9.1.*		
8.3.	*CHECK with respondent:* Not pregnant or unsure `1` ↓ Pregnant `2` *(Skip to question 8.15)*		
8.4.	Are you currently doing something or using any method to delay or avoid getting pregnant? *Note: a sterilization in the past is current use.* Yes .... 1 No 2		

'8.5.	CHECK with respondent:			
	If ever used is 'Yes' and Current use is 'No'	☐ 1 ↓	If current use is 'Yes'	☐ 2 (⟶ Skip to question 8.7)

8.6.	What was the main **reason** for discontinuing the method?	
	Method failed/became pregnant while using 01	
	Wanted to become pregnant 02	
	Husband disapproved 03	
	Health concerns/problems 04	Skip to 8.15
	Side effects 05	
	Lack of access 06	
	Inconvenient to use 07	
	Other 96	
	Specify _____	

8.7.	What method are you using?	
	Female sterilization 01	
	Male sterilization 02	
	IUD 03	
	Injectables 04	
	Pill 05	
	Condom 06	Skip to 8.10
	Rhythm method 07	
	Withdrawal 08	
	Other modern method 09	
	Other traditional method 10	

8.8.	In what facility did the sterilization take place?	
	Central/Provincial Hospital 1	
	County hospital 2	
	Other (specify) 6	

8.9.	In what month and year was the sterilization performed?	
	Year .... ☐☐☐☐	Skip to 8.15
	Month .... ☐☐	

8.10.	Since what month and year have you been using <Current Method> without stopping?	
	Year .... ☐☐☐☐	
	Month .... ☐☐	

8.11.	Where did you obtain <Current Method> the last time?	
	(Not applicable in the case of Rhythm and Withdrawal methods in Q 8.7)	Central/Provincial Hospital 1
		County/District Hospital 2
		Ri hospital/clinic 3
		Other (specify)_____ 6

8.12.	At that time of starting contraception, were you told about side effects or problems you might have with the method?	Yes .... 1 No 2
8.13.	Were you told what to do if you experienced side effects or problems?	Yes .... 1 No 2
8.14.	Were you told about other methods of family planning that you could use? *(Not applicable in the case of sterilization)*	Yes .... 1 No 2
8.15.	Women sometimes have pregnancies which do not result in a live born child. That is, a pregnancy can be ended early by an abortion, a miscarriage, or a stillbirth. I would now like to ask you about induced abortion. Did you ever have an induced abortion? Please, also include abortions induced by yourself or with the help of a health professional.	Yes .... 1 No .... 2 ➝ *Skip to 9.1.*
8.16.	In total, how many induced abortions have you had? Number of abortions	[ ][ ]
8.17.	How many months pregnant were you when you had your last abortion? Number of months	[ ][ ]
8.18.	What was the main reason you decided to have this (last) abortion? Health of mother .... 01 Risk of birth defect .... 02 Socio-economic reason .... 03 Respondent did not want (anymore) children .... 04 Spacing next pregnancy .... 05 Husband did not want the child .... 06 Unmarried .... 07 Other *(specify)* _____ 96	

	9. Fertility Preferences		
9.1.	Check questions 8.2=1 or 2, 8.4=1 & 8.7= 03 thru 10 . Neither sterilized [1] ↓		Check question 8.7= 01or 02 He or she is sterilized [2] *Skip to 9.12.*
9.2.	Check question 8.3 or ask respondent Pregnant [1] ↓		Not pregnant or unsure [2] *Skip to 9.4.*
9.3.	At the time you became pregnant did you want to become pregnant <u>then</u>, did you want to wait until <u>later</u>, or did you <u>not</u> <u>want</u> to have any (more) children at all?	Then .... 1 Later .... 2 Not at all 8	
9.4.	Now I have some questions about the future. Would you like to have (a/another) child, or would you prefer not to have any (more) children?	Have another child .... 1 No more .... 2 *Skip to 9.6.* Says she cannot get pregnant .. 3 *Skip to 9.12.* Undecided/don't know .... 8 *Skip to 9.11.*	
9.5.	Check question 9.2 1 2 Not pregnant or unsure [1] Pregnant [2] ↓ ↓ How long would you like to wait from now before the birth of (a/another) child? After the birth of the child you are expecting now, how long would you like to wait before the birth of another child?	Months a. [ ][ ][ ] Years b. [ ][ ][ ] Soon/now .... 993 *Skip to 9.10.* Says she cannot get pregnant .. 994 *Skip to 9.12.* Other _____ 996 ⎤ *Skip to 9.10.* (Specify) Don't know .... 998 ⎦	
9.6.	**Check question 9.2** Not pregnant or unsure [1] ↓		Pregnant [2] *Skip to 9.11.*
9.7.	**Check questions 8.2 & 8.4.** Currently using contraceptive method? Not currently using [1] ↓		Currently us .... [2] *Skip to 9.12.*
9.8.	**Check question 9.5. on preferred waiting time.** 1 2 3 Not asked [1] ↓ 24 or more months [2] ↓ or 2 or more years 0 - 23 Months [3] *Skip to 9.11.* or 0 - 1 Year		

9.9.	**Check question 9.4.**		

Check question 9.4.

<table>
<tr><td colspan="2">

1
Wants to have a [ ]
(another) child

↓

You have said that you
do not want (a/another)
child soon.

Can you tell me why
you are not using a
method to prevent
pregnancy?
Any other reason?

</td><td colspan="2">

2
Want no [ ]
more/none

↓

You have said that you do
not want any (more)
children.

Can you tell me why you
are not using a method to
prevent pregnancy?

Any other reason?

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</table>

Record all reasons mentioned.

Fertility related reasons
    Not having sex .... A
    Infrequent sex .... B
    Menopause/hysterectomy C
    Cannot get pregnant .... D
    Not menstruated since last birth .... E
    Breastfeeding .... F

Opposition to use
    Respondent opposed .... G
    Husband opposed .... H
    Others oppose I

Lack of knowledge
    Knows no method .... J
    Knows no source .... K

Method related reasons
    Side effects/health concerns .... O
    Preferred method not available .... M
    No method available .... N
    Inconvenient to use .... O
    Interfers with body's normal processes ... P
    Other _____ X
                            (Specify)
    Don't know .... Z

9.10. **Check question 9.7.**   Currently using contraceptive method?

                1   2

   Not currently using [ ]   Currently using [ ]   *Skip to 9.12.*

↓

9.11. Do you think you will use a contraceptive method to delay or avoid pregnancy at any time in the future?

    Yes   1
    No   2
    Don't know   8

9.12. **Check questions 7.12 & 7.14 .**

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1
Has living children [ ]

↓

If you could go back to the
time you did not have any
children and could choose
exactly the number of children
to have in your whole life, how
many would that be?

</td><td>

2
No living children [ ]

↓

If you could choose exactly
the number of children to
have in your whole life,
how many would that be?

</td></tr>
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Probe for a numeric response.

    None .... 00 → *Next woman*

    Number .... [ ][ ]

    Other _____ 96 → *Next woman*
                      (Specify)

9.13. How many of these children would you like to be boys, how many would you like to be girls and for how many would it not matter if it's a boy or a girl?

                Boys   Girls   Either
    Number [ ][ ]   [ ][ ]   [ ][ ]

10. Elderly Persons (Only for Persons aged 60 years and older)

10.1.	*The questions on elderly persons are restricted to men and women aged 60 years and older. Check the household roster and fill in a separate questionnaire for each person 60 years or older.* *These questions should be asked to each person individually and not to the head of household or main informer.* *First, copy the line number of the person you are about to interview from the household roster. Check the date of birth with the person and write down the year and month of birth.*

a. Line number household roster: .... ☐☐

b. Year of birth of elderly person .... ☐☐☐☐

c. Month of birth of elderly person .... ☐☐

Line Number of respondent, in household roster who responded instead of the elderly person ☐☐

I would now like to ask you some questions about your general health.

10.2.	How do you rate your general health condition? Is it excellent, very good, good, fair or poor?	Excellent Very good Good Fair Poor	.... 1 .... 2 .... 3 .... 4 5
10.3.	Compared to your health 1 year ago, would you say that it is better, the same or worse than it was then?	Better Same Worse Don't know	.... 1 .... 2 .... 3 8
10.4.	Compared to other people of your age, would you say that your health is better, the same or worse?	Better Same Worse Don't know	.... 1 .... 2 .... 3 8

10.5.	Does the person experience any difficulties in performing basic activities at home (Mark one of several answers)				
		No difficulty	Yes - some difficulty	Yes - a lot of difficulty	Cannot do at all
	a. Do you have difficulty seeing even if wearing glasses?	1	2	3	4
	b. Do you have difficulty hearing?	1	2	3	4
	c. Do you have difficulty walking or climbing stairs?	1	2	3	4
	d. Do you have difficulty remembering or concentrating?	1	2	3	4
	e. Do you have difficulty with self-care such as washing all over or dressing?	1	2	3	4
	f. Because of a physical, mental or emotional health condition do you have difficulty communicating (e.g. understanding others or others understanding you)?	1	2	3	4

I would like to ask some questions on the extent of help you require for daily activities.				
Type of activity of daily living	a. Level of independence	b. Who is the main caretaker?	c. If the main caretaker is not present, who else provides help?	d. For how long have you required this assistance?
10.6. Bathing	Do not require assistance .... 1 → Go to next activity Require partial assistance .... 2 Require full assistance 3	No one ....01 Spouse ....02 Son .... 03 Daughter ....04 Son/daughter in law .... 05 Other Relatives 06 Others 96	No one .... 01 Spouse ....02 Son .... 03 Daughter ....04 Son/daughter in law ...... 05 Other Relatives 06 Others 96	Less than 1 month .. 1 1 to 6 months .... 2 6 mths to 1 year .... 3 1 to 5 years .... 4 5+years .... 5 Don't know 8
10.7. Dressing	Do not require assistance .... 1 → Go to next activity Require partial assistance .... 2 Require full assistance 3	No one ....01 Spouse ....02 Son .... 03 Daughter ....04 Son/daughter in law .... 05 Other Relatives 06 Others 96	No one .... 01 Spouse ....02 Son .... 03 Daughter ....04 Son/daughter in law ...... 05 Other Relatives 06 Others 96	Less than 1 month .. 1 1 to 6 months .... 2 6 mths to 1 year .... 3 1 to 5 years .... 4 5+years .... 5 Don't know 8
10.8. Toilet	Do not require assistance .... 1 → Go to next activity Require partial assistance .... 2 Require full assistance 3	No one ....01 Spouse ....02 Son .... 03 Daughter ....04 Son/daughter in law .... 05 Other Relatives 06 Others 96	No one .... 01 Spouse ....02 Son .... 03 Daughter ....04 Son/daughter in law ...... 05 Other Relatives 06 Others 96	Less than 1 month .. 1 1 to 6 months .... 2 6 mths to 1 year .... 3 1 to 5 years .... 4 5+years .... 5 Don't know 8
10.9. Mobility	Can move in and out of bed/ chair without assistance (may be using cane or walker for support) .... 1 → Go to next activity Can move in and out of bed/ chair with assistance 2	No one ....01 Spouse ....02 Son .... 03 Daughter ....04 Son/daughter in law .... 05 Other Relatives 06 Others 96	No one .... 01 Spouse ....02 Son .... 03 Daughter ....04 Son/daughter in law ...... 05 Other Relatives 06 Others 96	Less than 1 month .. 1 1 to 6 months .... 2 6 mths to 1 year .... 3 1 to 5 years .... 4 5+years .... 5 Don't know 8
10.10. Incontinence	Can control urination and bowel movements completely by self .... 1 → Go to next activity Has occasional problems with urine or bowel control .... 2 Supervision helps keep urine or bowel control; catheter is used or is incontinent 3	No one ....01 Spouse ....02 Son .... 03 Daughter ....04 Son/daughter in law .... 05 Other Relatives 06 Others 96	No one .... 01 Spouse ....02 Son .... 03 Daughter ....04 Son/daughter in law ...... 05 Other Relatives 06 Others 96	Less than 1 month .. 1 1 to 6 months .... 2 6 mths to 1 year .... 3 1 to 5 years .... 4 5+years .... 5 Don't know 8
10.11. Feeding	Do not require assistance .... 1 → Go to next person Require partial assistance .... 2 Require full assistance 3	No one ....01 Spouse ....02 Son .... 03 Daughter ....04 Son/daughter in law .... 05 Other Relatives 06 Others 96	No one .... 01 Spouse ....02 Son .... 03 Daughter ....04 Son/daughter in law ...... 05 Other Relatives 06 Others 96	Less than 1 month .. 1 1 to 6 months .... 2 6 mths to 1 year .... 3 1 to 5 years .... 4 5+years .... 5 Don't know 8